University of Mississippi

eGrove

Honors Theses

Honors College (Sally McDonnell Barksdale Honors College)

Spring 5-8-2022

A Cross-Cultural Survey of the Funerary Practice of Body Element Removal and Deposition in Mortuary Pottery

Sara Grevy

Follow this and additional works at: https://egrove.olemiss.edu/hon_thesis

 Part of the Archaeological Anthropology Commons

Recommended Citation

Grevy, Sara, "A Cross-Cultural Survey of the Funerary Practice of Body Element Removal and Deposition in Mortuary Pottery" (2022). *Honors Theses*. 2557.
https://egrove.olemiss.edu/hon_thesis/2557

This Undergraduate Thesis is brought to you for free and open access by the Honors College (Sally McDonnell Barksdale Honors College) at eGrove. It has been accepted for inclusion in Honors Theses by an authorized administrator of eGrove. For more information, please contact egrove@olemiss.edu.

A CROSS-CULTURAL SURVEY OF THE FUNERARY PRACTICE OF BODY ELEMENT REMOVAL AND DEPOSITION IN MORTUARY POTTERY

by

Sara Anne Grevy

A thesis submitted to the faculty of The University of Mississippi in partial fulfillment of the requirements of the Sally McDonnell Barksdale Honors College.

Oxford, MS

May 2022

Approved By

_____

Advisor: Dr. Matthew L. Murray

_____

Reader: Dr. Carolyn Freiwald

_____

Reader: Dr. Alexis O'Donnell

© 2022
Sara Anne Grevy
ALL RIGHTS RESERVED

DEDICATION

For my mom, who has always lovingly encouraged me in all things. Thank you, I would not be here without you.

ACKNOWLEDGEMENTS

Thank you to Dr. Murray, my advisor, who has guided me through this process from the beginning and introduced me to the world of archaeology and anthropology. I would also like to thank Dr. Freiwald and Dr. O'Donnell for being my second and third readers. Lastly, I would like to thank the Department of Anthropology and Sally McDonnell Barksdale Honors College for giving me amazing professors who have guided and encouraged me throughout my undergraduate career.

ABSTRACT

Proteomic residue analysis conducted on several ceramic sherds from funerary vessels dating to the early Iron Age (700-400 BCE) led to the discovery of peptides of human blood, tissue, and organs. The pottery was recovered in 1999 from Grave 5 in Tumulus 17, an early Iron Age burial mound, at the Heuneburg, a paramount settlement and mortuary complex in southwestern Germany. Prior to this discovery, there had been no evidence of the removal of body elements and their deposition in funerary pottery during the early Iron Age. This thesis presents a cross-cultural literature survey of archaeological, ethnographic, and historical evidence of excarnation (removal of flesh and organs) in other times and places that identified a range of possible interpretations of this previously unrecognized practice in the early Iron Age. Analysis of the cross-cultural evidence indicates that the practice of body element removal and deposition in funerary pottery had a wide range of materialist purposes and symbolic meanings.

TABLE OF CONTENTS

LIST OF FIGURES AND TABLES

LIST OF ABBREVIATIONS

BCE	Before Common Era
CE	Common Era
DNA	Deoxyribonucleic Acid
aDNA	Ancient Deoxyribonucleic Acid

CHAPTER I: INTRODUCTION

In 2017, proteomic residue analysis detected the presence of human blood, tissue, and organs on the interior surfaces of mortuary pottery recovered from an early Iron Age grave (ca. 650 BCE) in Tumulus 17 near the Heuneburg, a paramount regional complex in southwestern Germany (Wiktorowicz et al. 2017). The results revealed a previously unknown aspect of early Iron Age mortuary practices.

This thesis uses the proteomic evidence from Tumulus 17 as a starting point to survey published archaeological evidence across the world for the inclusion of human blood, tissue, and organs in mortuary vessels, which may indicate the practice of exsanguination (draining of blood) and evisceration (removal of body organs) prior to burial. Mummification and the use of "canopic jars" for organs in dynastic Egyptian tombs are well-known examples of the practice but how common was it in other cultures and times? Since proteomic residue research is relatively new, available published evidence of human blood, tissue, and organs in mortuary vessels may be sparse, so this thesis will also examine cross-cultural ethnographic and/or archaeological evidence. Cross-cultural examples from fourteen sites and regions are examined in Chapter III and suggestions for possible functional and/or symbolic interpretations of the practice in the early Iron Age of Central Europe are the subject of Chapters IV and V.

The Heuneburg in Southwest Germany

The Heuneburg (Figure 1) is the best known and most intensively studied early Iron Age (ca. 700 to 400 BCE) archaeological complex in Central Europe (Krausse et al. 2016:9). Around 600-580 BCE, the "acropolis" at the Heuneburg, a natural limestone outcrop overlooking the Danube River about 5 hectares in size, was enclosed by a mudbrick wall of Mediterranean design (Krausse et al. 2016:49-54). This acropolis was part of a much larger fortified lower settlement of at least 100 hectares that included numerous independently bounded but spatially integrated households and workshops (Krausse et al. 2016:83-87). Access to the lower settlement was through a monumental Mediterranean-style stone gate erected opposite a group of large burial monuments constructed in the later 6th century.

The Heuneburg complex is considered one of best examples of paramount regional power in the early Iron Age and it had far-flung cultural connections to other parts of the European world, including the Greek colony of Massalia (Marseilles), the southern Alps, northern Italy, the Attic peninsula in Greece, Greek Black Sea colonies, and the Baltic Sea. The Heuneburg complex is surrounded by numerous burial mound groups (Krausse et al. 2016: 113-138) that have been assumed to be the burial places of early Iron Age elites associated with the paramount settlement. Between 540 and 530 BCE, the acropolis and mudbrick wall were burned and destroyed. Although the acropolis was rebuilt and connections to the Mediterranean were maintained, it was eventually superseded in regional importance by developing polities to the north and east, and the Heuneburg never again achieved paramount status.

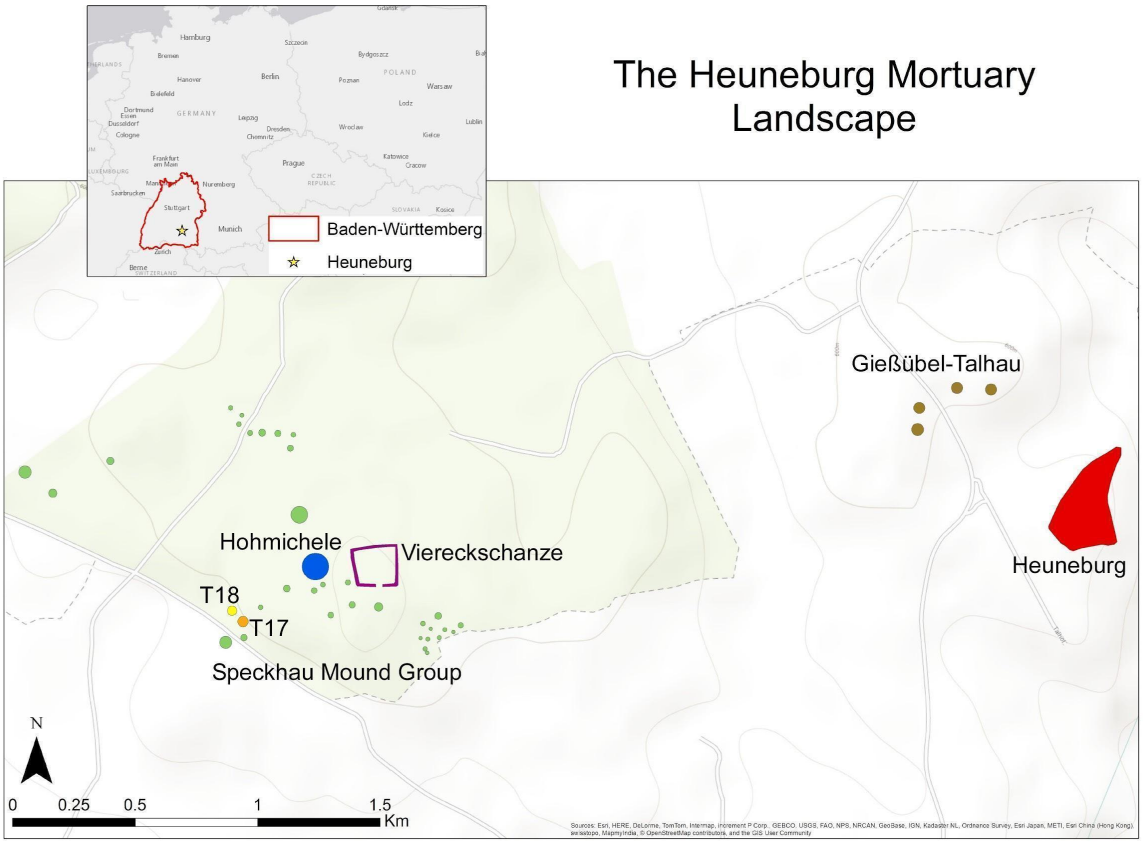

Figure 1. The location of the Heuneburg in southwest Germany (inset map) and the location of the Landscape of Ancestors Project west of the Heuneburg, showing the two burial mounds excavated, Tumulus 17 and Tumulus 18, in the Speckhau mound group (K. Garstki in Arnold and Murray 2022).

Landscape of Ancestors Project

North American archaeologists Bettina Arnold (University of Wisconsin, Milwaukee) and Matthew Murray (University of Mississippi) conceived the *Landscape of Ancestors* project as a multi-thematic and transdisciplinary approach to examine assumptions about the cultural development of the Heuneburg; it is a paramount early Iron Age polity and has connections to surrounding burial mound groups. Another goal was to provide new perspectives on early Iron Age society through contemporary multi-scalar mortuary research (Arnold 2003; Arnold and Murray 2002, 2016, 2022:6). In particular, they were interested in the chronological and cultural-historical claim that large mound groups farther away from the acropolis, such as the Speckhau group (Figure 1), represented founder generations of the polity, while later generations were buried closer to the acropolis as the polity declined in importance during the late 6th and early 5th centuries BCE (Hallstatt D1 to Hallstatt D3). Murray also explored the Heuneburg mortuary landscape as intersecting multi-scalar contexts for social practice and examines ontological negotiations of nature/culture, life/death, and person/object (Murray 2016, 2017; Murray and Arnold 2019), while Arnold emphasizes how gender, status, and power are entangled in funerary behaviors (Arnold 2016, 2021).

As part of the project, two medium-sized burial mounds in the Speckhau mound group, about 2000 m west of the Heuneburg acropolis, were comprehensively excavated and documented. Tumulus 17 was excavated in 1999 and 2000, and Tumulus 18, just 20 m away, was investigated in 2002 (Arnold 2003:11). The Speckhau mound group includes the largest monument in the Heuneburg region, the Hohmichele, which is one of the largest prehistoric burial monuments in continental Europe. Tumulus 17 and Tumulus 18 are about 250 m from the Hohmichele (both mounds have since been reconstructed with interpretive signage as part of the Heuneburg archaeological park).

Although both mounds were established and used around the same time, their structures and biographies were remarkably different and provide a broader perspective on early Iron Age mortuary behavior at the Heuneburg. The project established that outer mound groups like Speckhau were used throughout the early Iron Age occupation of the Heuneburg, from before its founding as a paramount polity in Central Europe around 600 BCE to its destruction and reconstruction (Arnold and Murray 2002:321). Social groups in the Heuneburg surroundings maintained long-distance cultural contacts during and after the sociopolitical fluorescence of the Heuneburg. Graves in the two mounds revealed new cultural contacts through artifacts with southeast England (Kimmeridge Shale) and Galicia in northwestern Iberia (Arnold and Murray 2022:1). The project identified intensive regional migration of women, likely through exogamous marriage practices. The women buried in both mounds were overwhelmingly from the Black Forest to the northwest of Swabia, and their regional origins were emphasized when they were buried in their non-local regional costumes. The project also recovered evidence of previously unrecognized mortuary diversity and epidemiology as well as labile ontological categories of person and object as well as life and death (Arnold and Murray 2022:1).

Excavation of Tumulus 17 (Figure 2) revealed that the mound was originally about 22 m in diameter and 3 m high, although its existing height is diminished by post-depositional processes, in particular fox burrows and disturbances in antiquity during the late 19th century. Despite these disturbances, the intricate stratigraphy and burial sequences of the mound remained intact. Tumulus 17 was originally constructed over the remains of a funeral pyre and primary cremation burial (Grave 5) and was used for three secondary inhumations (Graves 1, 3, and 4). Seriation of the burial pottery associated with Grave 5 suggests that the burial was established in the phase Hallstatt C2 or D1 (ca. 650-600 BCE). After interment, a large 5-x-5-m rectilinear structure was established around the pyre remains and burial (Arnold and Murray 2016:124).

Eventually a small primary mound about 1.5 m high and 10.6 m in diameter was constructed in several stages over the remains. Around 600 BCE, the grave of a well-costumed woman (Grave 4) from the Black Forest region to the northwest of the Heuneburg was interred in the primary mound. The primary mound was then covered with a layer of funerary debris, including burned bone, bronze and iron objects, and ceramic fragments from vessels belonging to Grave 5 (Murray and Arnold 2019:238). The debris layer was exposed long enough to allow materials to erode and accumulate in a colluvial deposit at the base of the primary mound. The primary mound was then capped and sealed with a cap of sterile gray clay. At some point, probably after 500 BCE, the mound was expanded with additional layers of soil and two inhumations were placed in the fill: Grave 3 around 450 BCE and Grave 1 around 450-400 BCE (Murray and Arnold 2019:238). During mound expansion, excavation revealed evidence of numerous episodes of burning and deposition of lithic and ceramic debris.

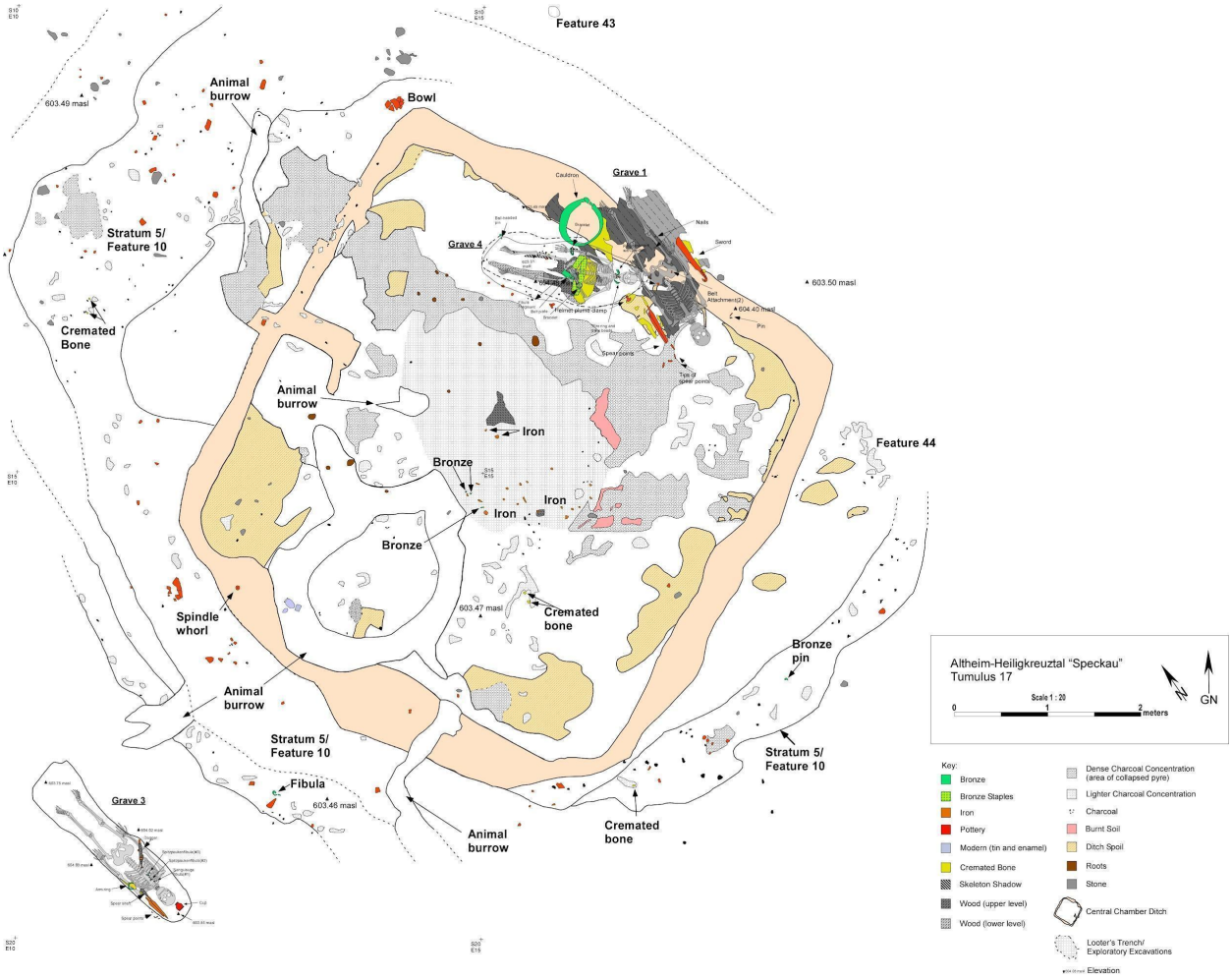

Figure 2. Composite plan of Tumulus 17 with remains of the primary funeral pyre and Grave 5, the ditched enclosure, and secondary inhumation burials (Graves 1, 3, and 4). Elevation is ignored so that important features and their horizontal spatial patterns are shown (K. Garstki in Arnold and Murray 2022).

Tumulus 18 (Figure 3) was originally about 22 m in diameter and at least 2.5 m high, but like Tumulus 17, it had been reduced by post-depositional processes that included erosion on the down-sloping south and west sides of the mound as well as substantial surface removal and internal disturbances during antiquity and in historic times. Despite these potentially destructive events, the burial biography of the mound was remarkably intact. Similar to Tumulus 17, this mound was erected over the remains of a funeral pyre and cremation burial (Grave 1/2/8), but in contrast to Tumulus 17, the mound was then used for 16 secondary inhumation graves (Graves 3-7, 9-19). Tumulus 18 was established at least a generation earlier than Tumulus 17 as indicated by the remaining burial pottery, which dates to the phase Hallstatt C1/2 (ca. 700-650 BCE). After interment of the primary cremation burial, a mound was constructed relatively rapidly in two main stages for the placement of secondary inhumation graves. The first secondary inhumation was interred in the fill around 650-600 BCE and the last burial was placed around 450-400 BCE, so burial in Tumulus 17 and Tumulus 18 was generally synchronic (Arnold and Murray 2016:124). Although the interment history of Tumulus 18 differed from Tumulus 17, the mound also revealed the routine practice of sacrificial burning and offerings of stone, bone, and pottery on the interior surfaces of the mound.

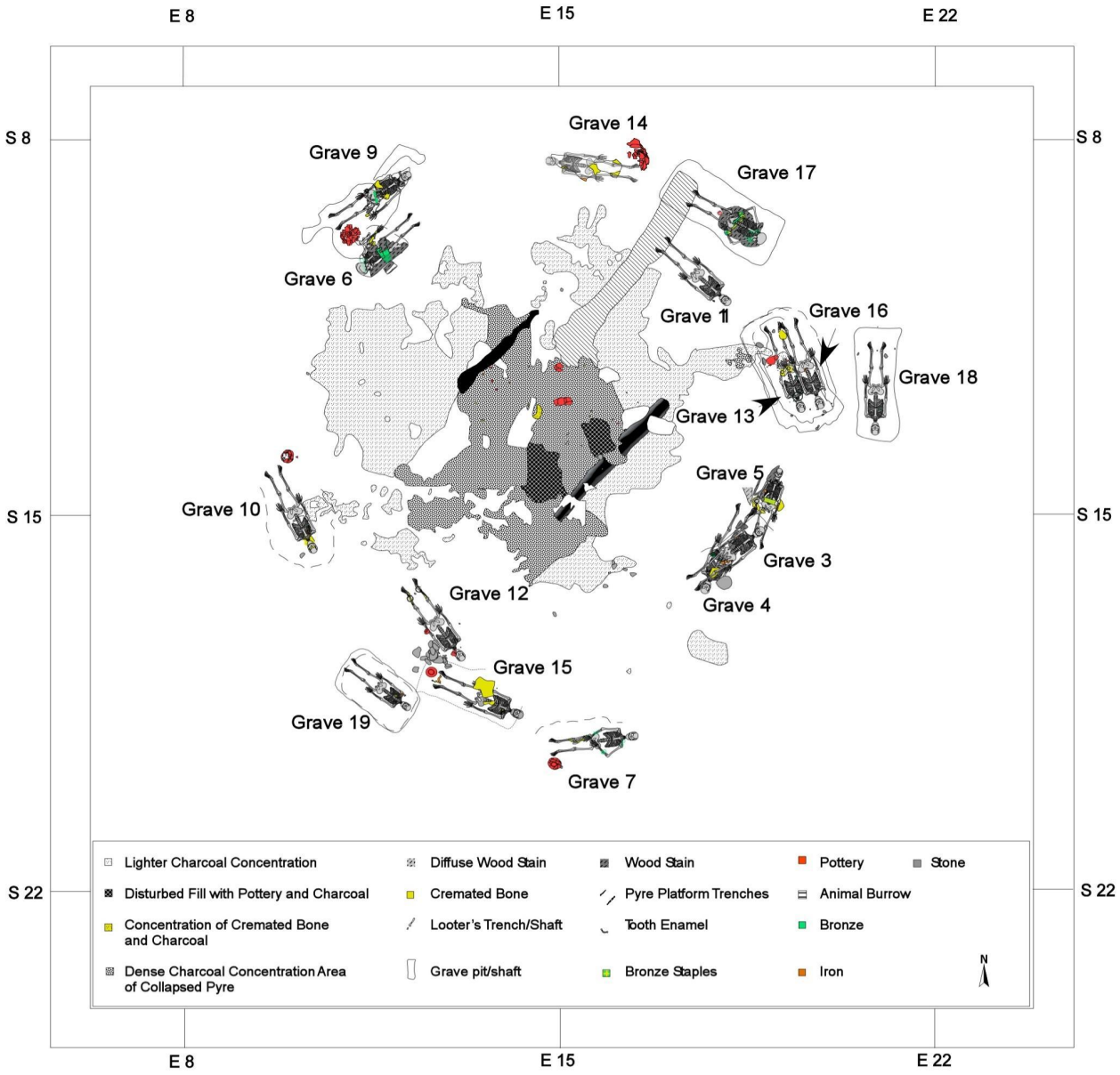

Figure 3. Composite plan of Tumulus 18 with remains of the primary funeral pyre and Grave1/2/8 and all secondary burials (Graves 3-7 and 9-18). Elevation so that important features and their horizontal spatial patterns are shown (K. Garstki in Arnold and Murray 2022).

Funerary Pottery Samples for Proteomic Analysis

As part of a Ph.D. thesis completed at Purdue University (Wiktorowicz 2017) on the novel application of protein residue analysis (proteomics) to the study of archaeological ceramics, samples from six different funerary pottery vessels were examined from Tumulus 17. Five samples were from mound contexts associated with the primary interment (Grave 5), including fragments of four typical ornate funerary urns known as "Kegelhals" pots (Figure 4) and one bowl. A sixth sample was derived from a finely-made bowl that had been placed on the margins of the primary interment, evidently at the same time as the deposition of the primary funeral remains. The results provided the first evidence of the use of mortuary pottery vessels to store human blood, tissue, and organs in the early Iron Age as well as the earliest indication of hemorrhagic fever virus in Europe (Wiktorowicz et al. 2017:33).

Funerary pottery in the early Iron Age is usually assumed to have been used for food and drink, and protein analysis also indicated that the vessels from Grave 5 had once contained cow's milk and blood, sheep tissue, cat blood, evidence of egg laying hens, and wild carrot (Wictorowicz et al. 2017:33). The discovery of human proteins was unexpected, especially since the human peptides were far more numerous than the detected animal peptides (Wictorowicz 2017:76). The evident use of funerary pottery to store human blood, tissue, and organs in Grave 5 in Tumulus 17 challenges contemporary understandings of early Iron Age mortuary behavior at the Heuneburg (Murray and Arnold 2019; Wiktorowicz 2017).

Figure 4. Reconstruction of a typical ornate funerary vessel, or "Kegelhas" pot, of the early Iron Age from Tumulus 17 (A. Dittus in Arnold and Murray 2022).

Proteomic Analysis & Findings

Proteomic analysis is a relatively new archaeological method that analyzes the protein content of biological samples (Hendy 2021:1). Advances in using mass spectrometry, which can be used to identify elements and analyze proteins, has allowed for the identification of ancient proteins (Hendy 2021:1) Because proteins are involved in many biological functions, specific amino acid sequences allow for the identification of various protein species (Hendy 2021:1). Prior to the application of proteomic analysis to pottery from Tumulus 17, previous archaeological studies had focused on lithic artifacts, not ceramics (Hendy 2021:2).

Six ceramic sherds were chosen for proteomic residue analysis from the primary cremation burial (Grave 5) of Tumulus 17. The sherds were tested to examine the vessels'

contents and function relative to the burial, with the expectation that resulting proteins would reflect food and drink associated with funerary feasting. The presence of peptides of human blood, tissue, and organs on the interior surfaces of the pottery was unexpected (Wiktorowicz 2017:76) and suggested previously unrecognized aspects of early Iron Age mortuary behavior. Prior to this discovery, human body elements had not been detected in early Iron Age mortuary pottery (Murray and Arnold 2019:244). This thesis was developed to establish a global cross-cultural comparative basis for interpreting the novel results of the proteomic residue analysis of pottery from Tumulus 17. In the next chapter, the proteomic residue analysis results from Tumulus 17 are put into the larger context of the archaeology of mortuary practices.

CHAPTER II: THE ARCHAEOLOGY OF MORTUARY PRACTICES

Mortuary practices are complex and can be described as acts that have significant meanings to the people involved (Parker Pearson 2003:5). As a result, burials are not as much about who died but about who buried them because the living treat and dispose of the body (Parker Pearson 2003:3). The study of human remains, grave goods, and grave structures allows for the cultural and societal relationship between the living and dead to be examined. Cemeteries, including mounds like those at the Heuneburg, provide a context for archaeologists to explore social relations such as kinship, gender, and status, which are a part of cultural behavior (Parker Pearson 2003:12).

By using types of analysis, new contexts of mortuary practices have been discovered, allowing for insight into the wide range of treatments to the dead (Parker Pearson 2003:20). Funerary rituals are one way of representing a part of society and culture because there is such a variety of mortuary practices across the world, especially regarding body element removal. Though, mortuary practices have to be examined within the context of the time period and culture to understand the motivating factors behind the treatment of the body (Parker Pearson 2003:44-45). The treatment of the corpse can reveal an understanding of life and death in different cultures (Parker Pearson 2003:45). However, human remains and material objects do not accurately represent all mortuary practices involved with death (Parker Pearson 2003:49).

While the corpse is a biological entity, it must also be viewed as an artifact because it conveys beliefs about the structure of society and views of the afterlife (Parker Pearson 2003:71). Studying the treatment of the corpse and the societal parameters surrounding death and burial allows for insight into how funerary practices affect a culture. The act of funerals is a central part of all societies' functioning because of its link between life and death (Parker Pearson 2003:83). Parker Pearson states, "To understand funerary practices, archaeologists have to consider now that such events are representations of the perceived reality of social relations and are open to conflict, negotiation, and misrepresentation" (Parker Pearson 2003:86). Funerary rituals, therefore, are complex and variable even within one society. Because mortuary archaeology has evolved to include historical and political contexts, it has allowed archaeologists to understand the significance of burials with a perspective focused on the practices of the society in which they were created (Parker Pearson 2003:94).

The status of the dead also plays a significant part in studying and interpreting burials within mortuary archaeology because it can help determine their role in society and how that translates after death (Parker Pearson 2003:74). Status can be divided into achieved status (position obtained in life) and ascribed status which consists of characteristics of an individual such as age, gender, or race (Parker Pearson 2003:74). These attributes can help to determine the hierarchical organization of graves and how it ties into the funerary rituals as the artifacts buried alongside a corpse can correlate to the status of an individual because they help archaeologists to determine wealth in addition to characteristics of age and gender (Parker Pearson 2003:75). In the Iron Age, these artifacts can include the presence of gold, drinking items, and other luxuries which differ significantly between rank and gender (Parker Pearson 2003:79). While most large weapons such as swords are associated with males, smaller knives and adornments are more

likely buried with a female. These funerary artifacts help to decipher the complex social structure of ancient civilizations by determining how an individual was viewed in society after death.

Types of Analysis

Before the recent advent of proteomic residue analysis, other scientific techniques were applied to the archaeological contexts of death and burial, examining issues such as diet, status, migration and geographic origin, and genetic makeup. Methods of bone chemistry (stable isotopy and mineral analysis) and ancient DNA (aDNA) revolutionized mortuary archaeology, enabling archaeologists to learn new aspects of life and death from skeletal material.

At death, soft tissue decays rapidly, destroying the DNA present in the soft tissue (Bramanti 2013:100). As a result, new methods were developed to extract DNA or aDNA from human remains thousands of years old. The aDNA is extracted from hard tissue such as bones and teeth as they are preserved the longest after death (Bramanti 2013:101). However, it can sometimes also be extracted from the soft tissue, muscle, or skin if the remains are mummified (Bramanti 2013:102). Analyzing aDNA allows for insight into the life and death of individuals, including kinship relations among people buried together in graves or cemeteries (Bramanti 2013:103). It can identify if an individual suffered from a genetic condition, disease, or infection (Bramanti 2013:104-105). The preservation of remains is the determining factor for the ability to extract aDNA as it is primarily found in environments that do not undergo extreme changes, which allows for remains to be better preserved (Bramanti 2013:106).

In addition, isotopic analysis gives insight into environmental and dietary practices of both the individual and society by analyzing remains (Eriksson 2013:126). In archaeology,

carbon, nitrogen, oxygen, and sulfur are the most frequently used isotopes for gaining information about the dead (Eriksson 2013:126). These isotopes are used to determine the main environmental and dietary factors as well as what anomalies, such as an extremely different diet or class distinction regarding the quality of life, there may have been across a society (Eriksson 2013:126). These differences can be linked to class, status, age, or sex, allowing for more information about societies unavailable without chemical analysis (Eriksson 2013:126).

Such analyses were foundational in changing the ability of what could be learned from the dead. However, both aDNA and isotopes are used primarily for skeletal analysis and are not broadly applicable to more common and durable archaeological materials in mortuary contexts, such as funerary pottery. The development of proteomic analysis in archaeological contexts has allowed for a new way to gain information about specific protein sequences that can provide information regarding the presence of human blood, tissue, and organs in ceramics, which was unavailable before the use of this analysis. As analyses of remains and other materials continue to evolve in the field of archaeology, especially regarding the use of proteomics, more information can be discovered regarding the mortuary practices of various societies and cultures.

Functional and Symbolic Approaches to Cultural Interpretation

The archaeology of mortuary practices engages with acts and events that often have concrete materialist functions and abstract symbolic meanings. Cultural practices are viewed from either an insider or outsider perspective, influencing the two main theoretical anthropological approaches. Examining both within and outside the framework that a cultural or mortuary practice was created can inform interpretations of that practice. Functionalism and

symbolism view aspects of culture and human behavior differently (Praetzellis 2011:77). The functional, or material, explanation favors the material effects within a society, while the symbolic approach examines the internal motivations of a behavior (Praetzellis 2011:81) Both emphasize different parts of reality within a society, but they are still used to explain cultural practices (Praetzellis 2011:81). The anthropological perspectives of functionalism and symbolism are briefly laid out here to help understand the different interpretations of the mortuary practice of body element removal examined in Chapters 3 and 4.

Functionalism, more specifically materialism, emphasizes an outsider's view of culture. Marvin Harris (1974:4-5) was a prominent figure of the materialist perspective. Harris believed that the study of human behavior should not be motivated by understanding what a belief or action means to someone in a society but rather to find explanations regarding why the particular behavior occurs through material analysis (McCutcheon 1999:18). By studying materialist aspects of culture, such as the political and economic environments, anthropologists can discern the causes behind behaviors and beliefs (McCutcheon 1999:18). As a result, the goal of the materialist approach is to create a set of criteria so that all societies can be examined in order to compare and explain cultural behaviors (McCutcheon 1999:18). Therefore, studying culture is not limited by the people within a society because it adheres to scientific and comparative analysis (McCutcheon 1999:18).

The symbolic approach of anthropology was popularized by Clifford Geertz (1973:5), who argued that culture is interpretive. Instead of solely focusing on the insider or outsider perspective, Geertz believed that there was relativity to viewing acts within a society (McCutcheon 1999:21). Viewpoints can be either "experience-near" or "experience-distant," referring to if the individual is a participant (near) or an observer (distant). Geertz applied

concepts of cultural theories to understand the practices and beliefs of people within a society (McCutcheon 1999:21). Unlike Harris' materialist perspective, Geertz's approach did not have a goal of providing explanations for experiences and beliefs in a society (McCutcheon 1999:22). Instead, he sought to understand and interpret the meaning behind an individual's actions, not examine it in a larger, comparative framework (McCutcheon 1999:22). Examining both the material effects and motivations behind cultural behaviors, such as the mortuary practice of body element removal, allows for a more in-depth analysis of the meanings within cultures.

CHAPTER III: CROSS-CULTURAL CONTEXTS

Results of proteomic residue analysis conducted on early Iron Age mortuary pottery from Tumulus 17 of the Speckhau mound group at the Heuneburg in southwest Germany revealed unprecedented evidence of human body element removal and curation (Wiktorowicz et al. 2017:34). Since there is currently no comparative data from other early Iron Age contexts, a cross-cultural literature survey was undertaken to examine other documented contexts of excarnation and exsanguination as a mortuary practice across time and space. A review of these contexts provides a range of possible functional and symbolic interpretations for the practice in the early Iron Age at the Heuneburg.

The methods of this literature review began by using the practice of body element removal and deposition in Ancient Egypt as a starting point since the use of canopic jars is one the most well known examples of this practice. From there, various search terms regarding body element were implemented using both the University of Mississippi's Library database as well as Google Scholar. The search terms most used consisted of: canopic jars, organ removal, evisceration, exsanguination, and funerary vessels. Relevant examples that pertained to body element removal as a mortuary practice were included and any other relevant sources listed within bibliographies were examined for additional information. This survey uses both archaeological and ethnographic contexts for body element removal as evidence for the practice varies in societies and time periods.

The following presentation of the cultural contexts of body element removal and associated mortuary practices gathered during the cross-cultural literature survey is arranged chronologically within broad geographic categories. It begins in the Americas with the oldest documented evidence of body element removal as a mortuary practice among the Chinchorro of Chile.

The Americas

Chinchorro Mummies, Chile

There is an established archaeological and literary record of body element removal and manipulation spanning thousands of years. The first chronological evidence of evisceration and mummification has been linked to the Chinchorro culture in Chile. The Chinchorro culture existed from 5050-3000 BCE, about 2000 years before the peak of Egyptian embalming practices. They extracted the internal organs and replaced them with fibers from vegetables or animal hair (Rosso 2014:343). While the bodies were preserved, there is no evidence suggesting the preservation of the removed internal organs (Quilter and Arriaza 1997:123).

Mummification was performed on all members of the society, not just the higher class like in Egypt; with this, the Chinchorro were able to restore the body after death (Rosso 2014:344). Additionally, the organs and flesh were sometimes removed, but only the flesh was buried in vessels next to the dead (Rosso 2014:339). It is unknown why the other organs were not preserved, but in cases of this type of treatment, interring the flesh seemed to be an essential aspect. Their mummification practices were likely due to ritualistic and spiritual needs, unlike today, where it is primarily for display. Because there was no written language among the

Chinchorro and a limited understanding of the political organization, the mummification process may have served to avoid decomposition and preserve the body (Quilter and Arriaza 1997:123).

Defleshing and Evisceration at K'axob, Belize (Maya)

The Mayas (1100-1532 CE) had many complex rituals and burial customs that can be examined through evidence of remains. The Maya site K'axob in Belize contained burials that consisted mainly of primary interments, though some involved defleshing and removal of organs (McAnany et al. 1999:132). Remains were also sometimes dismembered for secondary interments, showing a wide variety of mortuary practices within the society (McAnany et al. 1999:132). These practices could have been related to spiritual or ritual aspects of the society, but it is unknown as there is no evidence of preserving the skin and other organs.

Evisceration, Mummification, and Sacrifice Among the Inca

The practice of mummification was widespread throughout many regions of the world, including South America. The Inca society in Peru practiced evisceration and embalming, much like mummification practices in ancient Egypt. Remains of Incan mummies are dated to the Late Horizon Period (1476-1534 CE). Accounts of Inca mummification were recorded by multiple chroniclers and were executed in various ways depending on the region. Mummification related to two factors: local traditions and the status of the deceased (Vreeland 1998:169). While mummification was mainly practiced on the elite, the specific parameters of mummification varied from location to location. Mummification also was practiced at sites associated with the Inca and included both evisceration and embalming, especially for elite individuals. However, accounts recorded by chroniclers suggest significant local variation as there was documentation

that some Incas removed the viscera and flesh, put them in a pot, and buried them next to the body (Vreeland 1998:170). The bodies were then wrapped, painted, and decorated to look similar to the individual before death. This type of practice is a "Type III" mummification because it includes both removals of viscera and intentional embalming of the corpse (Vreeland 1998:170). Because of this treatment, it is evident that social status contributed significantly to the type of mortuary practices an individual was subjected to (Vreeland 1998:171). Only upper-class members of society and those related to them were embalmed (Vreeland 1998:171).

For the Incas, the preservation of the deceased was seen as a gateway between the living and the gods, and it allowed the living to receive power through the mummies (Chamberlain and Parker Pearson 2001:30). Whenever a member of the nobility died, those close to the person were sometimes sacrificed and embalmed, enforcing the significance of preserving the person's life for whatever awaits them after death. With this, a close relation between ritual sacrifice and mummification is evident, suggesting that the Inca used human sacrifices to obtain internal organs for religious or divination purposes (Vreeland 1998:177). While practices of mummification and evisceration among the Inca cannot be fully explained, it can be inferred from current evidence that the practices were related to religious, cult, and magical motives (Vreeland 1998:177). There was an emphasis on preserving the body for the afterlife, which contributed to the removal of organs and their preservation as well.

One example relates mummification and organ removal to human sacrifice. In Túcume, Peru, remains of sacrificial victims had a threefold treatment: bloodletting, organ extraction, and decapitation (Toyne 2011:506). The presence of cut marks was found on bones, suggesting cutting the throat, severing the head from the neck, and opening the chest cavity (Toyne 2011:514). Toyne (2011:515) suggests that the chest cavity was opened to remove the heart and

even possibly the lungs, with no evidence of removal of other organs. After examining the remains at Túcume, it seemed as though the throat would be slit and the organs removed while the victim was still alive (Toyne 2011:516). There was a symbolic nature to removing the organs from a living human instead of after the individual had died.

The act of removing blood, the head, and the heart all show some ritualistic importance to this society (Toyne 2011:517). Removing blood from victims was vital because it could be used to "anoint the faces of idols and the doors of temples" (Toyne 2011:517). Iconography corroborating the archaeological and physical evidence of heart removal and bloodletting was also found, further supplementing the idea that this was a ritualistic activity (Toyne 2011:517).

While the cut marks on the bones at Túcume have been suggested to be related to heart removal, there is no direct evidence to support this claim (Toyne 2011:518). The idea that this practice was linked to heart removal comes from secondary sources on heart removals among the Inca (Toyne 2011:518). If this was indeed practiced, the removal of the heart and blood could have also been symbolically linked as "vital essences" which contributed to the biological and social maintenance of the society (Toyne 2011:518). However, dissimilar from practices in both Europe and Africa, as human sacrifice was not documented as a mortuary practice in these contexts, the ritualistic and religious motivations behind evisceration remain the primary motivators.

Africa

Capsian Culture

Similar to the cut marks found on remains in Tucúme, cut marks were discovered on remains of Stone-Age Capsians that lived in Algeria circa 6000 BCE (Haverkort and Lubell

1999:161). After further examination, it was inferred that these marks could have resulted from the evisceration of bodies after death. While there are speculations about why this may have occurred, it has been suggested that the organs were removed to preserve the body for a delayed burial as the body was transported back to the main camp or another site of significance for interment (Haverkort and Lubell 1999:161). This could have occurred if an individual died away from the camp because they were nomadic and often left in search of food and materials.

Dynastic Egypt

Perhaps the best-known example of organ removal and preservation is the use of Canopic jars in ancient Egypt. This ritual came about by Egyptians observing natural mummification of flesh, hair, and organs due to the extremely arid conditions in the geographic region (Rosso 2014:353). The Egyptians then took this observation of natural mummification and modified their funerary practices to incorporate the preservation of remains after death. Over four thousand years ago, during the Fourth Dynasty (2613-2498 BCE), organs first began to be removed and deposited in a vessel near the body in the burial chamber (Rosso 2014:357). This practice of placing organs in containers outside the body began within the upper classes but soon spread to some lower classes by the Fifth Dynasty (2498-2345 BCE), when Canopic jars were first introduced (Rosso 2014:358). While the practice was done by lower-class families who could afford embalming and mortuary vessels, it is most commonly known to be associated with the ruling class as most examples of body element removal were found among the tombs of pharaohs and their family members.

About four centuries later, all organs were removed and placed in Canopic jars during the Twelfth Dynasty (1991-1782 BCE), except for the heart (Rosso 2014:360). By the New

Kingdom, which began in the 16th century BCE and lasted until the 11th century, organs were removed with precision through an abdominal slit on the left-hand side (Rosso 2014:360). The removal of organs continued and evolved over the next few centuries, becoming more elaborate as embalming became more popular, especially among the upper-class. With an emphasis placed on organ removal and preservation in Canopic jars, more elaborate equipment was used after death (Meskell 1999:186). Egyptian mummification practices are thought to be almost inherently exclusive to the ruling and upper-class by the New Kingdom as the process was time-consuming, and paraphernalia surrounding death was costly (Meskell 1999:186).

Canopic jars were used throughout the Early and Late New Kingdom, though the industry became smaller and more elite (Grajetzki 2014:163,167). By this time, the use of four Canopic jars for the deaths of influential individuals was prominent (Grajetzki 2014:169). During the process of embalming, the liver, lungs, stomach, and intestines were removed and wrapped after preservation was complete (Giles 2013:486). The organs were then placed in Canopic jars made of various materials, including pottery, wood, limestone, and calcite (Giles 2014:486). The heart and kidneys were usually left in the body and not placed in Canopic jars (Giles 2013:486). The jars evolved to include stoppers in the top, each shaped like one of the four sons of Horus (Giles 2013:486). It can be inferred that the gods protected the viscera after death and possibly even into the afterlife.

Viscera removal was not a universal practice in ancient Egypt, even among the upper-class, as only some mummies dated to the 18th century BCE exhibited proof of organ removal (Meskell 1999:192). Additionally, other prominent burials do not show any evidence of organ removal during this time, which leads to the belief that this practice was likely a personal choice made by those close to the deceased (Meskell 1999:192). Nonetheless, the process of

embalming and organ removal was recorded and accounted for by the historians Herodotus and Diodorus, who wrote about the extensive processes that the bodies went through (Rosso 2014:361-362). The extraction of viscera continued for over a millennium, peaking in the Twenty-First Dynasty (1070-945 BCE). Then the practice started to decline, almost ceasing to exist by the 1st century BCE (Rosso 2014:367). These practices in the ancient world helped shape the development of mummification and organ removal in societies in the Common Era or New World by establishing it as a well-known mortuary practice that became widespread amongst many cultures.

Although the significance of funerary rituals was initially reliant on the living world and those still living, practices gradually shifted to encompass the afterlife and focused on preserving a new life in the next world (Meskell 1999:181). During the Nineteenth and Twentieth dynasties, this shift happened with an explosion of ritual paraphernalia relating to death (Meskell 1999:186). With the peak of embalming and funerary practices, it is natural that funerary paraphernalia pertaining to preserving the body would become more popular. While canopic jars were frequently used for over a thousand years, their significance shifted to ritualistic and religious practice. During the Old Kingdom, burials of the highest class, the ruling class, included canopic jars (Grajetzki 2014:138). The evidence of this practice clearly shows that this was an Egyptian practice for centuries. Canopic jars and other burial goods served the purpose of protecting the body (Grajetzki 2014:155). It appears that it was important to preserve not only the body but also the viscera, showing a focus on death and preparation for the afterlife.

Central Asia

Scythian Nomads

Organ removal was evident in Pazyryk, an Altai tomb site used by nomad groups like the Scythians from the 6th century BCE to the 3rd century BCE (Steinhardt 1998:233). Evidence of evisceration was present, but there was no evidence of preservation. However, this discovery at the site helped bring more credibility to the ancient scholar Herodotus of the 5th century BCE, who wrote about the removal of organs among societies like the Egyptians (Steinhardt 1998:233). While there was no evidence of burying the organs, there is evidence of them being replaced with vegetal substances, similar to earlier groups of people (Steinhardt 1998:233). Organs could have been removed to preserve the body until burial, even though they were not preserved in a mortuary vessel. Multiple bodies had been eviscerated, which was only known about because the bodies had been mummified (Chamberlain and Parker Pearson 2001:138). It has been suggested that perhaps only nobles were embalmed, but it also could be attributed to people dying in the harsh winter months (Chamberlain and Parker Pearson 2001:141). During this time, the ground was too hard for the body to be buried, so it is a likely explanation that the body was eviscerated and embalmed to preserve it for the summer months.

Europe

Bronze Age Scotland

Evidence of mummification was found during the Bronze Age (2200-700 BCE) in the Western Isles of Scotland (Parker Pearson et al. 2005:534). The remains were found bound and wrapped, with the soft tissues still being relatively intact (Parker Pearson et al. 2005:541). However, for mummification to be effective at this time, the bodies would have needed to be

eviscerated, as decaying usually starts from the internal organs (Parker Pearson et al. 2005:541). In this case, it is unknown what happened to the organs after they were removed, but it can be inferred that they were not deemed necessary to preserve, or they had already decayed past the point of preservation. In this instance, the removal of organs was likely due to the desire to mummify the remains without the chance of them decaying.

Medieval Europe

While Egyptians used embalming to preserve the body for the afterlife, it was used to symbolize power in the Middle Ages (700-1500 CE). In the Middle Ages, monarchs had their bodies preserved to signify the political and divine authority over their land (Chamberlain and Parker Pearson 2001:26). Although, both societies used the act of body element removal as a way to preserve power both on Earth and in eternity. Monarchs exuded the legacy of power even after death, which was crucial to maintaining a monarchy during the Middle Ages. The practice of disembowelment and embalming became popular among the upper-class during the Medieval period (Weiss-Krejci 2010:119). The practice began with the Frankish Empire in the 8th or 9th century CE and became standard practice in the Roman Empire a century or two later (Weiss-Krejci 2010:119). Extracting the organs and separate burials were used by both English and French aristocracy beginning in the 12th century CE (Weiss-Krejci 2010:120). By the 13th century, removing the organs was not just a way to preserve the body but was also a show of spiritual power (Chamberlain and Parker Pearson 2001:27). The funerary practices for the death of a king were essential to show that one monarch had died and that his power was now transferred to the person next in line for the throne (Duch 2016:18). For this reason, the embalmed remains were usually displayed to the public from the 12th to 16th centuries

(Chamberlain and Parker Pearson 2001:26). By the end of the 14th century, a king's body could be displayed for up to ten days (Duch 2016:74). By the middle of the 15th century, that had changed to weeks, not days, so the process of embalming was vital to preserving the body for an extended period of time (Duch 2016:106).

With the practice, the viscera were usually removed, slowing the decaying process, especially when a monarch died far away from their home (Chamberlain and Parker Pearson 2001:26). At this time, dying away from home was quite common, as many kings went off to fight in battles or wars. For this reason, the body would have to be eviscerated to survive the journey back home with as little decay as possible. Organs would be removed and placed in jars for transportation to the funeral and future transportation to the burial site (Duch 2016:76). Medieval ideas about death involved thinking that the bodies of those who were holy would not decay while those unholy would (Duch 2016:73). To keep this belief, monarchs employed the services of surgeons to embalm their bodies after death; they made sure to conceal the incisions from evisceration with clothing and regalia (Duch 2016:75). At the time, more emphasis was on the appearance of a corpse rather than determining how it came to appear that way (Duch 2016:82). As a result, parts of the body, like the heart or intestines, began to be buried in different places than the body itself (Weiss-Krejci 2010:120). The practice of burying entrails in a different location than the body was popularized and placed a ritual significance on that place and its relation to the deceased. Chamberlain and Parker Pearson (2001:44) state that "Mummification is not simply a manifestation of religious institutions and a belief in the afterlife. It can also be a performance for immediate and longer-term political and social effect." For monarchs on display, it was important to show that their bodies did not decay because they

exuded power even after their death, hence the need for embalming and evisceration (Duch 2016:73).

There are multiple accounts of separate burials, including Emperor Otto I in the 11th century CE and Emperor Henry III in the latter half of the 11th century (Weiss-Krejci 2010:122). However, the removal and separate burial of organs in the 16th century CE onwards was not usually for practical reasons but symbolic (Weiss-Krejci 2010:120). While the practice was used as a show of spiritual power beginning in the 13th century CE, it became more widely used by monarchs, no matter the cause or location of death. During this time, it was vital that the heart be buried in a different physical location than the body and other organs (Weiss-Krejci 2010:120). Usually, the organs and body would be buried in different churches or places of religious significance (Weiss-Krejci 2010:121). However, other practices relating to organ burial were likely due to religious movements spreading throughout Europe (Weiss-Krejci 2010:121). For Christians, parts of the body were interred in separate places, mainly including priories and abbeys that the individual was attached to (O'Sullivan 2013:265).

However, it is likely that heart burials gradually declined in popularity because people elected to bury the entire corpse instead and because there was too much competition between various religious orders for these burials to impact (Weiss-Krejci 2010:130). These burials were essential to benefit the individual and advocate for spirituality by burying the parts of the body in religious patronages, especially during the Early Middle Ages when this was a point of power that had not been previously done on this scale in Europe (Weiss-Krejci 2010:132). Heart burial popularity also remained inconsistent throughout the Medieval period because royal funerary practices were constantly changing (Duch 2016:163). When innovations were made in the upper-class, they would slowly begin to be practiced amongst lower classes, calling for a change

in funerary practices among the upper-class again to distinguish themselves from the rest of society (Duch 2016:147). Additionally, evisceration was also necessary for transport and was also seen as a symbol of high status because of the expense it incurred (Weiss-Krejci 2010:132). The practice of separate burials promoted a ritual action related to both status and devotion to religion (Weiss-Krejci 2010:132). While similar to its predecessors, the Middle Ages brought a new mortuary practice to Europe, which lasted for centuries as its symbolic and political nature was of the utmost importance to maintaining power within the monarchy.

Post-Medieval and Pre-Industrial Europe

While the popularity of embalming among upper-class members varied for a millennium, monarchs were embalmed from the 11th century onwards until the death of Queen Victoria in 1901, barring a few exceptions (Zigarovich 2009). In post-medieval times, organs of kings or other strong religious figures were buried at churches to strengthen the Catholic Church during the Reformation and Counter-Reformation (Weiss-Krejci 2010:127). Weiss-Krejci (2010:131) sums up the idea of separate burials by stating: "The preference given to heart burial in Central Europe is mainly a post-medieval phenomenon and developed during the Catholic Reformation when heart symbolism gained special importance in a specific moment of spiritual and political crisis." While embalming had been practiced in medieval and post-medieval times, its lasting effects and use were not known in more recent times, including the 18th century and onwards (Zigarovich 2009).

Although reasons varied considering circumstances, the main argument for the necessity of embalming in pre-industrial England was that there was an extended time between death and burial, especially in the cases of elite members of society (Zigarovich 2009). Preparations for the

funeral and travel for family members and friends had to be arranged, which meant many people were not immediately buried. During this time, the average period between death and burial was one week to three weeks (Zigarovich 2009). Without the process of embalming, corpses would decay and would not be able to be displayed for funerary rites. By this time, having a funeral with the body displayed was extremely important for grieving and acceptance. Zigarovich (2009) states that "beautification and embalment were used to hide physical signs of mortality and decay, as well as overcome separation and loss." In addition to embalming, organs, such as the heart, were buried in a viscera chest or box to preserve part of the individual (Zigarovich 2009). Evidence for this practice is also expressed through wills, which explicitly call for evisceration and embalming (Zigarovich 2009). However, embalming called for a skillful surgeon who possessed the expertise to remove organs and preserve them and the body, again, enforcing the need for wealth (Zigarovich 2009). These funerary items were popular among the wealthy and upper-class, especially lead viscera boxes, because they preserved organs like the heart so well (Zigarovich 2009). Viscera receptacles were made of gold, silver, and wood, which further expressed their status and wealth to those around them (Zigarovich 2009). Wealthy members of society followed these practices because they symbolized their power and wealth and were customary in high society (Zigarovich 2009). Embalming and heart burials were socially accepted at the time to the point where individuals would explicitly express their wishes after death to family members, as well as informal documents such as wills.

Heart burials were also seen as a part of the mourning process, in addition to a final show of power (Zigarovich 2009). If the whole body could not be embalmed because someone died overseas or it was too expensive, an organ like the heart would be preserved for sentimental reasons (Zigarovich 2009). While this practice was common during the Middle Ages, it

continued into post-Medieval times. It spread from monarchs to other members of society who could afford the grandeur and expense. Hearts and occasionally other organs were buried in the individual's favorite church, shrine, or even in the Holy Land to show their devotion to God (Zigarovich 2009). The practice began in France but spread to British royalty and beyond, making it a commonality in society (Zigarovich 2009). By the 18th century, aristocrats, poets, and even military personnel had their hearts buried in places of significance to them (Zigarovich 2009). While separate burials and embalming focused on power in the Middle Ages, it shifted to symbolism and sentiment among those who could implement the practice and wished to do so.

Other Examples Across the World

While conducting the cross-cultural literature review of documented evidence of body element removal as part of mortuary practices, several additional contexts were identified, although there is very little information about them in the available publications.

Evisceration was used by the Heiltsuks of British Columbia, the Aleuts of the Aleutian Islands, and on the Torres Strait Islands in recent centuries as a way to clean the body before other mortuary practices (Chamberlain and Parker Pearson 2001:85-86). In San Domenico, Naples, Italy, evidence of evisceration and mummification was found on bodies from the 15th to 19th centuries (Ascenzi et al. 1998:273). The evidence of mummification was found in both children and adults. It has been suggested that the evidence of organ removal and embalming indicates that this practice was a common and widespread custom (Ascenzi et al. 1998:274).

Moreover, mummies were also found in the Guanche society on the Canary Islands. The society existed from about 500 BCE to the 1400s, with evidence of mummification present on various islands, including Tenerife, Gran Canaria, La Gomera, and El Hierro (Ascenzi et al.

1998:284). Within this society, it seems that only the elite members were mummified. Thoracic and abdominal incisions were present in some of the mummies, suggesting the practice of evisceration (Ascenzi et al. 1998:284). Like the practice of mummification, it is suggested that evisceration was only used for elite members of society (Ascenzi et al. 1998:284). There is no evidence of preservation of organs, so it is likely they decayed or were not deemed useful to keep in Guanche burial practices. Although these organs were not preserved in a mortuary vessel, they were deemed necessary to remove for religious and ritualistic reasons.

CHAPTER IV: FUNCTIONAL AND SYMBOLIC EXPLANATIONS

As presented in the previous chapters, there are both functional and symbolic reasons for cultural behavior. Motivated by both societal and cultural factors, roles of status, sex, and age are associated with practice of body element removal. Because the functional and symbolic explanations identified in the previous chapter vary by which is the primary motivating factor, this chapter will examine the two separately first. Then, it will explain how they can work in tandem as both functionality and symbolism and are attributed to the mortuary practice of body element removal.

The literature review described in Chapter 3 discovered fourteen documented contexts of body element removal across the world. Two of these contexts (Medieval Europe and Post-Medieval/Pre-Industrial Europe) are particularly complex and encompass numerous occurrences in various prehistoric and historic entities in Europe. The instances in Europe range from symbolic ideas such as power, divine status, and investiture to functional needs such as preserving the body for transport. Overall, the contexts range from 6000 BCE to the 19th century CE, encompassing North, South, and Central America, North Africa, Europe, Central Asia, and Melanesia (Figure 5).

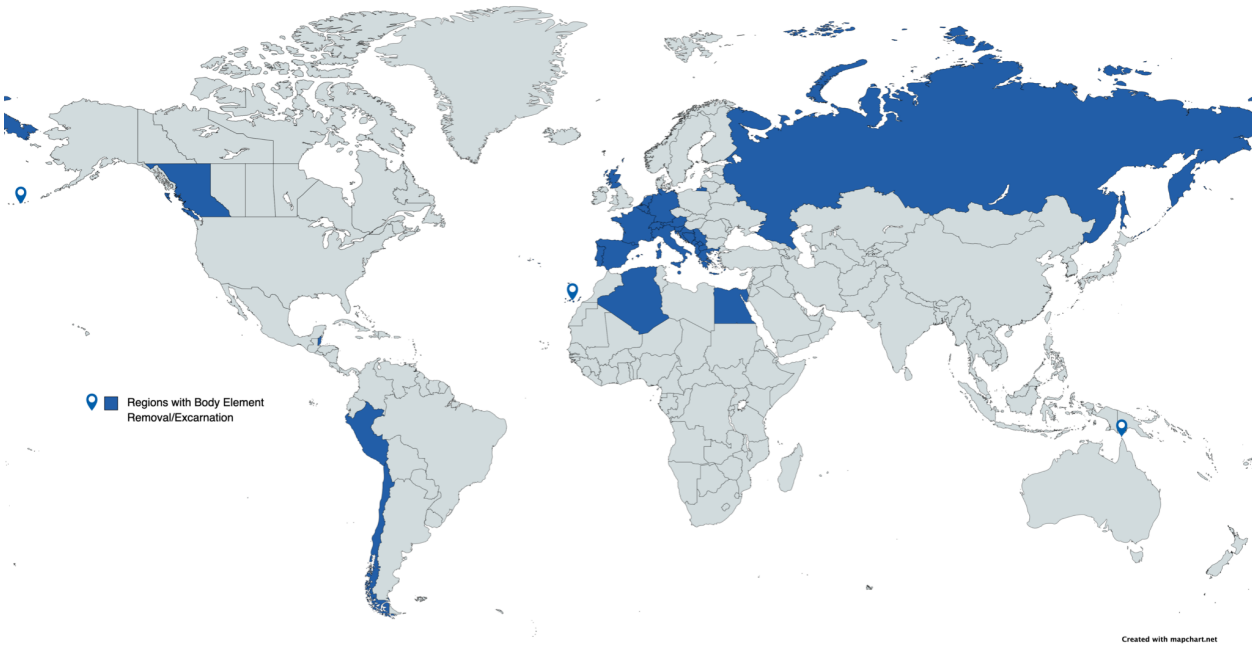

Figure 5. World map of regions with body element removal/excarnation

Functional Explanations

The use of evisceration and exsanguination as a functional purpose was primarily due to transport. Within the Middle Ages, the practice of evisceration first began as a necessity when kings would die hundreds of miles away from their home. As bodies would decay faster with the organs still inside, they were removed and placed in boxes or jars, for safekeeping during travel, to help slow the process (Duch 2016:76). Similarly, organs were also removed in post-medieval and pre-industrial Europe. Though still used to stop the body from further decay, it was primarily used because of the long period of time between death and burial. Since embalming was not widely used yet in Europe, the body would decay fast and not allow much time for funerary preparations and extended family to make the journey (Zigarovich 2009). Evisceration was

implemented in order to help make the process as efficient as possible while maintaining the integrity of the corpse. This explanation can also be attributed to the bodies from the Bronze Age and the Pazyryk site, in the Altai mountains of Siberia, as both were mummified after evisceration.

As well as preservation for mummification, the Pazyryk bodies could also have been eviscerated due to the potential long period of time between death and burial (Chamberlain and Parker Pearson 2001:141). As the climate in the region was extremely cold, the ground would have been too hard to dig into and bury bodies. Likewise, the Capsians could have also had delayed burials because they were a nomadic society. If an individual were to die away from the camp, their body would have to be brought back for burial (Haverkort and Lubell 1999:161). Depending on how far a group had gone in search of food and other necessities, they could have been many miles away, making the journey back to camp an extended one. Like other societies, the corpse could have been eviscerated to stop the decaying process on the journey back.

These functional explanations relate primarily to the amount of time between death and burial. Societies that did not embalm corpses had no other way to stop the body from decaying except by removing the internal organs (Chamberlain and Parker Pearson 2001:26). Time was an extremely important factor when it came to death, so it is clear why this practice was functionally necessary in the cases of some deaths.

Symbolic Explanations

Most of the instances of evisceration and exsanguination laid out in the previous chapter involve some type of symbolic meaning. An explanation for the separation of organs and blood from the body can perhaps be explained by the need for ritual. According to Michael Parker

Pearson (2003:194), “ritual is a customary practice where procedure is prescribed and explicit, though meanings can be ambiguous, mysterious, or implicit.” Within each society, there are accepted rituals related to death and the afterlife. This is evident as funerary rituals are used as spaces of innovation and change within a society (Parker Pearson 2003:194). These practices are indeed influenced by aspects of everyday human life, but rituals allow for it to happen through a set of guidelines and parameters decided by the society (Parker Pearson 2003:195).

Within the Chinchorro culture of Chile, the practice of evisceration and replacement with organic materials was likely due to ritualistic and spiritualistic motives that adapted from the observation of natural mummification in the arid conditions of the region (Quilter and Arriaza 1997:123). These motives guided the society on their treatment of the dead and the importance for this practice because it was done on all members of the society (Rosso 2014:344). Though not as much evidence exists about the Chinchorro mummies, the most likely explanation for evisceration in this case was to stop the body from decaying further before mummification.

Similarly, the ancient Egyptians were religiously and spiritually motivated as they removed organs from the dead in order to preserve them for the journey to the afterlife (Meskell 199:181). However, this practice was not widespread like the Chinchorro, suggesting that it was only important for those of the upper-class. Because evisceration and mummification became so popular among the upper-class, it can also be viewed as a way to enforce power (Grajetski 2014:138). Only pharaohs and those with close relations were meticulously prepared for their journey to the afterlife, showing that they were the ones viewed worthy to be equipped as good for death as life.

The Middle Ages also saw a type of burial that drew upon the practices of ancient Egypt. Here, the practices of evisceration and heart burials were highly popular among kings. Heart

burials were done as a show of power for the monarch and continuing the monarchy itself (Chamberlain and Parker Pearson 2001:26). By burying a part of the body in a separate, yet strategically placed, part of their empire, the spiritual and governmental power of the monarch was widely known and remembered. Its symbolism to both monarchs and the territories they ruled help maintain this practice over the course of a few centuries.

The Incas and Mayas also used evisceration as a mortuary practice, but within different contexts than many of its predecessors as organ removal was not common in the societies. Since the populations of both groups were so spread out, the local traditions and status of the individual usually dictated what was done to their body after death (Vreeland 1998:177). Mummification was also used in some instances, suggesting that evisceration could have been used to preserve the body for a longer period of time before preservation by mummification. Moreover, evisceration was not only used on the dead, but on human sacrifices (Toyne 2011:506). Though these two types of body element removal within Maya and Inca cultures are different, it is clear that the need for this practice was likely related to ritualistic and religious motives.

Lastly, with the instances among the bodies from the Bronze Age, the Pazyryks, the Capsian remains, and Heiltsuks, evisceration could have been due to a number of factors. With the instances of mummification, the organs could have been removed to help stop further decay (Parker Pearson et al. 2005:541). However, it is unknown if the motivations behind evisceration were due to symbolic, or perhaps, functional reasons. In previous examples above, organs were removed for symbolic or religious purposes in addition to their functionality. Since there are no written records explaining these practices, it is difficult to decipher the true meaning of evisceration within these societies.

The placement of these organs and blood into a vessel could possibly be the result of mortuary practices that deal with the ideas of magic and medicine (Wiktorowicz 2017:105). Medicinal practices have changed dramatically over thousands of years, but they all have the same goal of creating a positive outcome for the deceased individual and culture as a whole (Wiktorowicz 2017:105). From the sherds tested in Tumulus 17, presence of animal blood and cattle milk was found in addition to human blood and organs (Wiktorowicz 2017:100). In Tumulus 18, only human tissue (skin) and a few types of plants were found to be present in the mortuary vessels (Wiktorowicz 2017:108). Though, in both tumuli, this mixture of animal fluids and plants may perhaps be linked to magical and medicinal mortuary practices created to yield a beneficial result for the individual who died in addition to the society as a whole (Wiktorowicz 2017:105).

Though the motive for this Iron Age burial cannot be determined with certainty, it is clear that this practice was important for these specific individuals in Tumuli 17 and 18. This act was a shared experience through ritual and belief was created among those involved with the burial, as well as the entire community (Wiktorowicz 2017:116). Outliers of the accepted framework of mortuary practices can only be explained by a need unforeseen by those present and those who study the burials, thousands of years afterwards. The organ removal in this instance could have also been used as a way to heal the body from illness or uncleanliness, and it has similarities with European folk medicine and Western herbal medicine which are also used to heal an individual (Wiktorowicz 2017:106,113). Within the context of anthropology, the use of magic and medicinal practices are mainly used as a performative act to create an effect on the audience or community (Wiktorowicz 2017:114). The belief in a shared framework is what allowed the "magical ecology" of the mixture of humans, plants, and animals to become a unique local

mortuary practice within the Heuneburg (Wiktorowicz 2017:115-116). This "comingling mortuary practice" (Wictorowicz 2017:131) shows a previously unknown practice within the Iron Age that is rooted in symbolic rituals enacted by the society.

There are numerous potential explanations regarding this interesting instance of organ removal in the Iron Age, but they all link back to some form of symbolic ritualistic behavior no matter their motive. All of these symbolic examples have some commonality between them as they were all motivated by their beliefs about death and the afterlife. For some, removing organs was a vital process within mortuary practices; for others, it was a personal choice or one practiced among the upper-class. While there is evidence for body element removal among many cultures throughout history, it is important to note that these instances must be understood within the context of the society itself. These mortuary practices served an important purpose within the society they were performed and were extremely important to maintaining the structure as well.

Summary

Both functional and symbolic motives are attributed to most contexts of evisceration, exsanguination, and related mortuary acts discussed in Chapter 3. In cases above where the organs were removed in order to stop the body from decaying, they were also done so proper mortuary rituals could be carried out on the corpse. There is a clear connection between the two types of explanations, resulting in a combined use motivated by cultural factors. Though one may be more favored, both functional and symbolic explanations are tied to the mortuary practice of body element removal.

The particular manipulation of the corpse during mortuary practice, broadly termed in this thesis "body element removal," or excarnation, involves *evisceration* (removal of internal

organs), *exsanguination* (draining of blood and bodily fluids), and *defleshing* (removal of the external organ). All fourteen documented contexts identified and discussed in this thesis have documented evidence of evisceration (Table 1). Exsanguination and defleshing as a mortuary practice appear in this sample of the literature to be restricted to Prehispanic Native American mortuary practices. Exsanguination and defleshing is documented in the Chinchorro, Maya, and Inca cultures.

Table 1. Type of evidence for body element removal and deposition/curation

Type of Evidence	# of Contexts
Evisceration	14
Exsanguination	3
Defleshing	3
Deposition/curation in funerary containers	5

Evidence of various body element removal practices and the functional and symbolic explanations attributed to them are synthesized in Table 2. Some explanations are inherently practical, such as cleansing the body prior to burial or preserving the corpse for a delayed burial. Delayed burials may have been necessary for seasonal reasons or because the individual died far away from the desired funeral venue. Body display was a fundamental part of private and public mourning, especially when kin groups were dispersed and required time to travel for mourning activities. The practical and material aspects of body element removal world-wide often

intersected with social, political, and ideological motives that include divine status of the deceased, belief in eternal life, and negotiations of power. For example, the use of body element removal to preserve a royal corpse for a delayed burial in medieval and post-medieval Europe was typically associated with body display and veneration as well as strategies of publicly marking the transference or inheritance of power. Body preservation was also essential to symbolize the spiritual strength of the dead monarch and to deny or hide corporeal decay in order to maintain the public perception of the holiness of a royal house and its divine right to rule.

An issue of particular interest for understanding the mortuary practices in Tumulus 17 at the Heuneburg is the associated deposition—or curation—of removed body elements in funerary vessels. This associated practice was identified in five contexts: Chinchorro, Dynastic Egypt, medieval Europe, Post-Medieval and Pre-Industrial Europe, and Inca. Deposition or curation of body elements in funerary containers is associated often with overlapping motives such as preservation for display of the corpse and/or a delayed burial, divine status and spiritual power, investiture or inheritance of monarchical power, and belief in eternal life (Table 2). In most of these contexts, removed body elements were either curated in their containers or interred in a different location than the body. In medieval and post-medieval Europe, the hearts of embalmed monarchs and religious elites were interred separately at religious sites to show the deceased's devotion and to symbolically protect religious communities during times of spiritual and political crises. In pre-industrial Europe, organ burials in costly containers was a way to display wealth and status and burial locations were often selected to symbolize the life and values of the deceased.

Table 2. Body element removal and explanations

Context	Type of Evidence	Deposition/Curation in Funerary Container	Functional and Symbolic Explanations
Chinchorro	Evisceration, exsanguination, & defleshing	Yes	Divine status, religious motives for eternal life
Inca	Evisceration, exsanguination, & defleshing	Yes	Divine status, religious motives for eternal life
Maya	Evisceration and exsanguination	No	Divine status, religious motives for eternal life
Capsian	Evisceration	No	Delayed burial, nomadic society
Ancient Egypt	Evisceration	Yes	Divine status, eternal life
Scythian Nomads	Evisceration	No	Delayed burial, nomadic society
Bronze Age Scotland	Evisceration	No	Preservation of corpse, delayed burial
Medieval Europe	Evisceration	Yes	Power, investiture, devotion, spiritual strength, eternal life, delayed burial
Post-Medieval/ Pre-Industrial Europe	Evisceration	Yes	Power, protection, devotion, wealth and status, values, delayed burial
Heiltsuk	Evisceration	No	Cleanse body
Aleuts	Evisceration	No	Cleanse body
Torres Strait Islands	Evisceration	No	Cleanse body
San Domenico, Naples	Evisceration	No	Preservation of corpse
Guanche	Evisceration	No	Divine status & religious motives for eternal life

CHAPTER V: CONCLUSION

The identification of human blood, tissue, and organs in mortuary pottery associated with the primary grave in Tumulus 17, an early Iron Age burial mound at the Heuneburg in southwest Germany, was an unexpected discovery. Because the proteomic evidence was the first of its kind in Iron Age mortuary archaeology, it is difficult to appreciate what it means for the archaeology of early Iron Age mortuary practices. Therefore, a cross-cultural literature survey was undertaken to examine other documented contexts of evisceration and exsanguination as a mortuary practice across time and space. A review of the global contexts provides a range of possible functional and symbolic interpretations for this practice in the early Iron Age at the Heuneburg.

In the previous chapter, symbolic instances of body element removal are shown to be related directly to cultural and religious beliefs pertaining to an afterlife. Practices regarding body element removal varied with the importance and popularity of body preservation. Body element removal has been practiced for thousands of years in many cultures across the world, and it was used both for functional and symbolic purposes. The practice of removal within Tumulus 17 at the Heuneburg was probably linked to numerous motivations, though its prevalence in early Iron Age society in Central Europe is presently unknown due to a lack of appropriate data and analyses.

Regarding motivations related to the afterlife, there are instances of body element removal used in the following cultures: Chinchorro, ancient Egypt, Inca, Maya, Middle Ages,

and Guanche. For symbolic and religious reasons, it was essential to these cultures that the body was preserved for its journey to eternal life. As part of this practice, the body elements were often placed in mortuary vessels to accompany the body in burial. Whether to preserve the body before burial or for its use in the afterlife, body element removal was essential to ensure that the body decayed at a slower rate.

Excarnation was also used as a form of power and investiture. In many societies, evisceration and exsanguination were only practiced on the elite (Vreeland 1998, Grajetski 2014, Zigarovich 2009, Ascenzi et al. 1998). By distinguishing mortuary practices, it allowed the upper-class to be set apart, enforcing their status of power and wealth. This discernment is especially evident during the Middle Ages when the separate burials of monarchs were used to maintain the importance of the monarchy and transfer of power to the next king by preserving the body for display.

Regarding ritualistic and societal motives, the practice of body element removal in Tumulus 17 and evidence found around the world might also be supported by the presence of exsanguination and defleshing in the Mesa Verde region (700-1350 CE) in Southwestern Colorado among the Pueblo communities, though it not directly attributed to a mortuary practice practiced by the society (Billman et al. 2000:145). In this case, instances of excarnation in this society were attributed to the presence of anthropophagy, or cannibalism, that were found among remains at multiple sites (Billman et al. 2000:145). Numerous artifacts including tools and ceramics were found alongside the disarticulated remains and analysis of these artifacts could help to decipher this instance of anthropophagy (Billman et al. 2000:152). Artifacts were analyzed using blood residue analysis and yielded positive results of blood on both cutting tools

and ceramics, showing that body parts were stored and even cooked in these vessels (Billman et al. 2000:152).

The practice of anthropophagy within the Pueblo was conducive to a time of extreme duress in the society, which consisted of drought, starvation, political warfare, and social control (Potter and Chuipka 2010:507). It is unknown why these vessels would have contained blood or have been used to cook human body elements, but it could be attributed to the various social beliefs and political factors that existed within the society at the time. Even though the instances of exsanguination and defleshing are not directly related to mortuary practices, it does show the presence of blood in ceramic vessels in another culture, especially under extreme duress, which is another example that can be used to help contextualize the evidence of human blood and proteins in mortuary vessels in Tumulus 17.

Evisceration also had both social and practical material effects as this was a vital practice to preserve the body. Excarnation was necessary when an individual had to be transported back to their homeland because of war or travel because it could take days or weeks before the body was able to be buried. Again, in these cases, the organs were often removed and placed in vessels that accompanied the body in transport and burial. Though there are instances where evidence of deposition into mortuary vessels is not present, evisceration and exsanguination were still essential practices to prevent further decay of the body when it was not immediately buried (Rosso 2014, Vreeland 1998, Meskell 1999, Duch 2016, Zigarovich 2009).

The suggestion that preservation of the corpse was the desired function of body element removal in Tumulus 17 may be supported by analysis of the intact primary burial chamber in the early Iron Age “princely” mound at Hochdorf in southwest Germany (Olivier 1999), which was

constructed in the late 6th century BCE. The opulent tomb and monument were probably constructed for a paramount regional leader after the decline of the Heuneburg. Laurent Olivier (1999) presents a detailed analysis of the sequence and timing of actions and events in the construction of the chamber and mound at Hochdorf. The mound was constructed over a period of about five years (Olivier 1999:128). In early spring, the substantial central timber and stone chamber was constructed and surrounded by a large ring-mound of turf with a stone-lined passageway to the chamber. The chamber was left uncovered for a period of at least four weeks allowing vegetation to become established on exposed interior surfaces (Olivier 1999:128). Preparations for the production and placement of grave goods occurred during the time between chamber construction and interment of the corpse, which included the on-site manufacture of elements of the "prince's" burial costume (Olivier 1999:122). During these preparations, the corpse must have been preserved and possibly on display for the regional population, perhaps transported from community to community on the four-wheeled wagon that was eventually dismantled and placed in the chamber (Olivier 1999:122,128). Once the body and grave goods were arranged in the chamber, probably paraded along the elaborate passageway, the chamber was covered, and the passageway was filled.

There is no direct evidence that the Hochdorf "prince" was subjected to excarnation prior to burial; however, the excavation was conducted in the late 1970s before the development and application of scientific techniques necessary to detect the practice. The removal of blood and internal organs prior to burial would have slowed the process of corpse decomposition and facilitated the lengthy storage or display of the body during the interval between chamber construction, interment, and closure. It is reasonable to wonder if the evidence of body element removal associated with the primary burial in Tumulus 17 at the Heuneburg was undertaken as

part of a funerary process to enable preservation and display of the corpse before interment similar to that undertaken at Hochdorf.

Using a cross cultural survey of mortuary practices conducted by Carr (1995), it is evident that there are multiple factors that determine the specific practices regarding death and burial. These motivating factors can be divided into social and political organization and religious or philosophical worldviews, which both have relatively equal impacts on society and their views about death and the afterlife (Carr 1995:188). These patterns of mortuary practices regarding social structure and world views that can be seen in societies across the world, including those mentioned above in the previous chapter regarding the use of body element removal (Carr 1995:189). Though there are no mentions of excarnation in Carr's analysis, his ideas on body manipulation can be relevantly applied to Tumulus 17 and the reasonings of previously undiscovered practices. It is not solely one aspect that causes a new mortuary practice to be implemented, but rather a combination of sociopolitical organization and religious/philosophical worldviews.

This thesis has presented a cross-cultural literature survey of published archaeological, ethnographic, and historical evidence of body element removal as mortuary practice. Evidence of this form of body manipulation in mortuary contexts is widespread in space and time, sometimes involving the curation of body elements in funerary pottery or other containers. There is a range of potential interpretations of the practice that include materialist functions and symbolic meanings. Until proteomic residue analysis is expanded to sample other assemblages of early Iron Age funerary pottery in Central Europe, it is unclear if Tumulus 17 at the Heuneburg represents the only instance of this unusual mortuary practice.

Bibliography

Arnold, Bettina
2003 Landscape of Ancestors: Early Iron Age Hillforts and Their Mound Cemeteries. *Expedition* 45(1):8-13.

2016 Belts vs. Blades: The Binary Bind in Iron Age Mortuary Contexts in Southwest Germany. *Journal of Archaeological Method and Theory* 23(3): 832-853.

2021 Intersectionality and Elite Identity in Iron Age West-Central European Mortuary Contexts. In *Vix el le Phénomène Princier*, edited by Patrice Brun, Bruno Chaume, and Federica Sacchetti, pp. 299-309. Una Éditions, Bordeaux.

Arnold, Bettina, and Matthew L. Murray
2002 A Landscape of Ancestors in Southwest Germany. *Antiquity* 76(292):321-322.

2016 Two Hallstatt Burial Mounds in the Hohmichele Mound Group in the 'Spekhau'. In *The*

Heuneberg and the Early Iron Age Princely Seats: First Towns North of the Alps by Dirk L. Krausse, Manuel Fernández-Götz, Leif Hansen, and Inga Kretschmer. Archaeolingua, Budapest.

2022 A Landscape of Ancestors: Archaeological Investigations in Two Iron Age Burial Mounds in the Speckhau-Hohmichele Group, in press. Stuttgart, Germany.

Ascenzi, Antonio, Paolo Bianco, Gino Fornaciari, and Conrado Rodríguez Martín
1998 Mummies from Italy, North Africa, and the Canary Islands. In *Mummies, Disease and Ancient Cultures*, edited by Aidan Cockburn and Eve Cockburn. Cambridge University Press, Cambridge, England.

Billman, Brian R., Patricia M. Lambert, and Banks L. Leonard
2000 Cannibalism, Warfare, and Drought in the Mesa Verse Region during the Twelfth Century A.D. *American Antiquity* 65(1):145-178.

Bramanti, Barbara
2013 The Use of DNA Analysis in the Archaeology of Death and Burial. In *The Oxford Handbook of the Archaeology of Death and Burial*, edited by Sarah Tarlow and Liv Stutz, pp. 123-146. Oxford University, Oxford.

Carr, Christopher
1995 Mortuary Practices: Their Social , Philosophical-Religious, Circumstantial, and Physical Determinants. *Journal of Archaeological Method and Theory* 2(2):105-200.

Chamberlain, Andrew T., and Michael Parker Pearson
2001 *Earthly Remains: The History and Science of Preserved Human Bodies*. British Museum Press, London, England.

Duch, Anna M.
2016 *The Royal Funerary and Burial Ceremonies of Medieval English Kings, 1216-1509*. PhD dissertation, Department of History, University of York, York, England.

Eriksson, Gunilla
2013 Stable Isotope Analysis of Humans. In *The Oxford Handbook of the Archaeology of Death and Burial*, edited by Sarah Tarlow and Liv Stutz, pp. 123-146. Oxford University, Oxford.

Geertz, Clifford
1973 *The Interpretations of Cultures: Selected Essays*. Basic Books, New York.

Giles, Melanie
2013 Preserving the Body. In *The Oxford Handbook of the Archaeology of Death and Burial,* edited by Sarah Tarlow and Liv Stutz, pp. 475–496. Oxford University Press, Oxford, England.

Grajetzki, Wolfram
2014 Chapter 1. Court Type Burials. In *Tomb Treasures of the Late Middle Kingdom*, pp. 17–93. University of Pennsylvania Press, Philadelphia.

Harris, Marvin
1974 *Cows, Pigs, Wars, and Witches: The Riddles of Culture*. Random House, New York.

Haverkort, Caroline M., and David Lubell
1999 Cutmarks on Capsian Human Remains: Implications for Maghreb Holocene Social Organization and Palaeoeconomy. *International Journal of Osteoarchaeology* 9(3):147–169.

Hendy, Jessica
2021 Ancient protein analysis in archaeology. *Science Advances* 7(3):1-11.

Krausse, Dirk L., Manuel Fernández-Götz, Leif Hansen, and Inga Kretschmer
2016 *The Heuneberg and the Early Iron Age Princely Seats: First Towns North of the Alps*. Archaeolingua, Budapest.

McAnany, Patricia A., Rebecca Storey, and Angela K. Lockard
1999 Mortuary Ritual and Family Politics at Formative and Early Classic K'axob, Belize. *Ancient Mesoamerica* 10(1):129–146.

McCutcheon, Russell T.
1999 Introduction. In *The Insider/Outsider Problem in the Study of Religion: A Reader*, edited by Russell T. McCutcheon, pp. 15-22. Cassell Academic, London.

Meskell, Lynn
1999 Archaeologies of Life and Death. *American Journal of Archaeology* 103(2):181-199.

Murray, Matthew L.
2016 Landscapes of Ancestors: The Structuring of Space around Iron Age Funerary Monuments in Central Europe. In *The Archaeology of Ancestors: Death, Memory, and Veneration*, edited by E. Hill and J. B. Hageman, pp. 147-165. University Press of Florida, Gainesville.

2017 Recycled Memories: The Past and Present in Early Iron Age Landscapes of Southern Germany. In *Working with the Past: Strategies for Crisis or Intentional Incorporation? Towards an Archaeology of Recycling*, edited by D. Gheorghiu and P. Mason., pp. 77-86. Archaeopress, Oxford.

Murray, Matthew L., and Bettina Arnold
2019 A Landscape of Ancestors: Looking Back and Thinking Forward. In *Historical Ecologies, Heterarchies and Temporal Landscapes*, edited by Celeste Ray and Manuel Fernández-Götz, pp. 235–247. Routledge, Abingdon, Oxon; New York, New York.

Olivier, Laurent
1999 The Hochdorf 'princely' grave and the question of the nature of archaeological \ funerary assemblages. In *Time and Archaeology*, edited by Tim Murray, pp. 109-138. Routledge, London.

O'Sullivan, Deirdre
2013 Burial of the Christian Dead in the Later Middle Ages. In *The Oxford Handbook of the Archaeology of Death and Burial*, edited by Sarah Tarlow and Liv Stutz, pp. 259–280. Oxford University, Oxford.

Parker Pearson, Michael
2003 *The Archaeology of Death and Burial*. Sutton, Gloucestershire, UK.

Parker Pearson, Mike, Andrew Chamberlain, Oliver Craig, Peter Marshall, Jacqui Mulville, Helen Smith, Carolyn Chenery, Matthew Collins, Gordon Cook, Geoffrey Craig, Jane Evans, Jen Hiller, Janet Montgomery, Jean-Luc Schwenninger, Gillian Taylor, and Timothy Wess
2005 Evidence for mummification in Bronze Age Britain. *Antiquity* 79(305):529–546.

Potter, James M., and Jason P. Chuipka
2010 Perimortem mutilation of human remains in an early village in the American Southwest: A case for ethnic violence. *Journal of Anthropological Archaeology* 29(4)507-523.

Praetzellis, Adrian
2011 *Death by Theory: A Tale of Mystery and Archaeological Theory*. AltaMira Press, Lanham, MD.

Quilter, Jeffrey, and Bernardo T. Arriaza
1997 Beyond Death: The Chinchorro Mummies of Ancient Chile. *The Journal of the Royal Anthropological Institute* 3(1):161.

Rosso, Ana Maria
2014 Mummification in the Ancient and New World. *Acta Medico-Historica Adriatica: AMHA* 12(2):329–370.

Steinhardt, Nancy S.
1998 Liao Archaeology: Tombs and Ideology Along the Northern Frontier of China. Asian Perspectives (Honolulu) 37(2):224–244.

Toyne, J. Marla
2011 Interpretations of Pre-Hispanic Ritual Violence at Tucume, Peru, from Cut Mark Analysis. *Latin American Antiquity* 22(4):505-523.

Vreeland, James M., Jr
1998 Mummies of Peru. In *Mummies, Disease and Ancient Cultures*, edited by Aidan Cockburn and Eve Cockburn. Cambridge University Press, Cambridge, England.

Weiss-Krejci, Estella
2010 Heart Burial in Medieval and Post-Medieval Central Europe. In *Body Parts and Bodies Whole*, edited by Katharina Rebay-Salisbury, Marie Louise Stig Sørensen, Jessica Hughes, pp.119–134. Oxbow Books, Oxford, England.

Wiktorowicz, Conner J.
2017 *A Bloody Mystery: Proteomic Residue Analysis of Archaeologically-Recovered Mortuary Ceramics From Iron Age Germany*. Purdue University, West Lafayette, Indiana.

Wiktorowicz, Conner J., Bettina Arnold, John E. Wiktorowicz, Matthew L. Murray, and Alexander Kurosky
2017 Hemorrhagic Fever Virus, Human Blood, and Tissues in Iron Age Mortuary Vessels. *Journal of Archaeological Science* 78:29–39.

Zigarovich, Jolene
2009 Preserved Remains: Embalming Practices in Eighteenth-Century England. *Eighteenth Century Life* 33(3):65–104.