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Natural Mummies of Northern Europe: An Exploration into the Biocultural Importance of Bog Bodies

Reilly Boone
Western Kentucky University, boone.reilly@gmail.com

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NATURAL MUMMIES OF NORTHERN EUROPE:
AN EXPLORATION INTO THE BIOCULTURAL IMPORTANCE OF BOG BODIES

A Capstone Project presented in Partial Fulfillment
of the Requirements for the Degree Bachelor of Science
with Honors College Graduate Distinction at
Western Kentucky University

By
Reilly S. Boone
May 2019

*****

CE/T Committee:
Doctor Darlene Applegate, Chair
Doctor Jean-Luc Houle
Doctor Christopher Keller
This thesis is dedicated to Mrs. Perryman: thank you for giving a name to my interest in other ways of life. Without you I would have struggled to find a way to balance the cultural and biological fields I adore.
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ABSTRACT

For several centuries, peat harvesters in Northern Europe have been finding the mummified remains of late Bronze Age (1100 – 800 B.C.E.) and Iron Age (800 B.C.E.-400 C.E.) people. Within the last century, scientists have begun to study these remains in depth. These bodies pique much curiosity due to the apparent violence associated with their deaths. Because of this, these remains have proven to be significant parts of the societies in which they died and that in which they were discovered. It is inferred from archaeological evidence that these individuals may have held religious importance in Bronze-Iron Age societies. Today, these remains continue to have cultural relevance for their role in inspiring introspection in modern societies. This paper examines the natural creation of bog bodies, describes three prominent examples of such remains, and discusses their significance in both ancient and modern eras. The final section proposes a holistic research program for the study of bog bodies that involves a comprehensive inventory, standardized bioarchaeological evaluation of specimens, and the application of anthropological concepts.
VITA

EDUCATION

Western Kentucky University, Bowling Green, KY
B.S. in Biology, B.A. in Anthropology
Honors Thesis: *Natural Mummies of Northern Europe: An Exploration into the Biocultural Importance of Bog Bodies*

Mahurin Honors College

Harlaxton College *(study abroad)*

RELEVANT EXPERIENCE

Living Archaeology Weekend, Slade, KY
Assistant Demonstrator

Western Mongolia Archaeology Field School, Zuunkhangai, Uvs, Mongolia
Student Researcher

Lab Practicum in Biological Anthropology, WKU Anthropology Lab
Student Researcher

AWARDS AND HONORS

Recipient of 2018-2019 Outstanding Anthropology Graduate in the Biological Anthropology Concentration Award

Study Abroad Photo Contest: Fall 2018 Global Learning Winner ($200)

Honors College Study Abroad Award ($500)

Cherry Presidential Scholar

Dean’s List (three terms), Presidents List (four terms)

MEMBERSHIPS

Secretary, Beta Beta Beta (National Biology Honors Society)
Member, National Society of Leadership and Success
Member, Rho Lambda (National Sorority Leadership Recognition Society)
Member, Anthropology Club
V.P. Standards, Girl Scout Chair, and Member; Kappa Delta Sorority, Delta Gamma Chapter
Member, Student United Way
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INTRODUCTION

_Bridegroom to the goddess,
She tightened her torc on him
And opened her fen,
Those dark juices working
Him to a saint’s kept body_

-S. Heaney, 1972

In 1973, Nobel Prize winning Irish poet, Seamus Heaney, visited the Silkborg Museum in Denmark and documented his visit with an entry in the guestbook. However, rather than simply recording his name, Heaney transcribed the stanza above from one of his poems. This particular poem discusses the remains of a man who had been discovered in the peat bogs of Denmark. This man has the appearance as if he had just fallen asleep, an impression that was countered by the rope encircling his neck. These Iron Age remains, now known as Tollund Man, have become one of the most famous bog bodies. The museum Heaney visited was hosting the largest exhibit at the time of these bog bodies from northern Europe. A bog body is the remains of an individual preserved by the acidic conditions created in many of the peat bogs of Europe. Heaney grew up near such bogs and was fascinated with these unique remains; however, he is not the only scholar to be captivated by Europe’s bog bodies.

Bog bodies have been the focus of various fields of scholarship since their discovery in the late 18th century, and there has been a tendency to romanticize the lives and deaths of these discoveries by both academic and literary scholars. Scholars of the arts, such as Heaney, enjoy the mystery that shrouds these beings, while scientists such as anthropologists seek to uncover and explain these mysteries (Lobell and Patel, 2010). The Bronze-Iron Age individuals themselves lived in a time of socially stratified farming
communities. They ate typical meals, resided in small villages, and practiced nature-based religions. However, in death they diverged from cultural norms because, rather than being cremated, they were interred in the marshy environments of bogs (Dell’Amore, 2014). Academics and artists still search to answer the question of why.

This paper serves to examine bog bodies, their prehistoric cultural context, and their context within modern literature. The first section of this paper provides information on creation of a bog body. The second section on the archaeological context of bog bodies focuses on the cultural context of the late Bronze Age-Iron Age people of northern Europe and describes three prominent examples of bog bodies. The third section examines explanations for the creation of bog bodies. The next section discusses the presence and influence of bog bodies in literature in order to demonstrate that while the remains appear to have carried great cultural significance in the societies in which they lived, they continue to have cultural significance in modern society. Finally, the closing section proposes a new program for researching bog bodies that will result in more comprehensive hypotheses on the subject.
CREATION OF A BOG BODY

As stated before, a bog body is a natural mummy created in acidic bogs. The word ‘bog’ finds its root in the Irish word bogach meaning marshy ground (McClean, 2008). Bogs are created when moss accumulates in low, wet patches of land or marshes. While upon first look it seems unlikely that the wet, marshy environments of bogs would preserve any organic material, the physical and biochemical make-up of the bogs make the exact opposite true (Fischer, 1984).

Physically, there are two types of bogs: those in which groundwater seeps beneath vegetation, which are called low-level marshes, and those in which rain water collects in hollows, which are called raised marshes. Due to their greater depth, the raised marshes are more likely to produce bog bodies because there is more space for the interment to be fully submerged. These marshes are composed of 95% water and are covered in a thin layer of living sphagnum moss. Below that thin layer is a much thicker layer of peat, a substance that is a combination of semi-decayed plant matter and water. While this creates an environment that is much too acidic for most species of trees and plants to grow, as described below, it provides the perfect conditions for preservation of organic matter, hence the reason peat is made of semi-decaying rather than decayed plant matter (Aldhouse-Green, 2015).

Additionally, the bottom layers of this peat are so compressed that no groundwater or other material enter the bog. The moss and the surrounding landscape allow for the retention of rainwater, which creates pressure that further compresses the moss, continuing the cycle. The limited inflow of groundwater and the pressure of bogs create an anaerobic or oxygen-deficient environment, which is important because bacteria
typically responsible for degrading organic material are unable to function without oxygen (Fischer, 1984).

Biochemically, the sphagnum (Figures 1 and 2) covering the peat creates a specific environment responsible for preservation through the secretion of sphagnan, a polysaccharide that interacts with a series of compounds to form humic acid (C₉H₉NO₆). These compounds and humic acid perform two chemical tasks that aid in the preservation of human remains. First, they have an affinity for calcium, and in binding to it, remove it from the body. This inhibits soft tissue decay, although this may lead to some breakdown of the hydroxyapatite molecules in bones. Secondly, the compounds interact with the skin of the deceased individual and initiate chemical reactions of tanning processes, meaning the soft tissues of the individual are preserved (McClean, 2008).

While most bogs produce humic acid and lack oxygen, this does not mean that any organic material that settles in a bog will be perfectly preserved. In his book, *In Search of the Immortals*, Howard Reid outlined three conditions that must be present in order for human remains to be preserved as natural mummies in bogs. First, the remains
must be fully submerged in the water and deep enough so that scavenging animals or insects are not able to inflict damage. Most bog bodies that have been discovered are found in pits dug from earlier peat harvesting. Second, the surrounding peat water must be acidic enough to initiate the tanning process. If the sphagnum and associated compounds have not collected at a level high enough to start this process, then the bones may preserve but the flesh will not. The final condition is temperature. The bog environment must be below 4°C (39° F) for several months after the body is deposited within the bog in order for the tanning process to occur. Given these required conditions, most bog bodies are found in northern Europe and are presumed to have been interred during the winter months, which is consistent with stomach content analysis of bog bodies, to be discussed later (Reid, 2001).

While the acidification and pressurization of the bog environment are beneficial to soft tissue preservation, they do not leave the remains unaltered. Tanning, which is the process of making leather from hides in an acidic environment, alters proteins in the skin making it less susceptible to decomposition. However, it also discolors the skin, and bog bodies typically display a deep brown pigment to their leathery skin. Similar to the skin, other soft tissues are preserved in these acidic environments, such as hair and nails. These, too, although preserved are altered by their environment, typically in their pigmentation. The most prominent example of this is a specimen called the “Red Franz,” so named due to his striking red hair found intact at the time of his discovery in a German bog in 1900 (Figure 3). However, it was later concluded that this color is not due to his genetics, but rather due to the acidic conditions in which he was placed after death (Lobell and Patel, 2010). Further, due to the increased pressure created in a peat bog and
the decalcification that occurs in bone, the hard tissues of a specimen may warp. The compromised composition of the bone, a lack of calcium, creates a loss of strength and stability in hydroxyapatite molecules of bone, which combined with pressure, can change the shape of the bone (Villa and Lynnerup, 2012).

Figure 3
Red Franz (Aldhouse-Green, 2015)
BOG BODIES IN THE ARCHAEOLOGICAL RECORD

The bog people were made famous by Danish archaeologist Peter Vilhelm Glob. Present during the recovery of both the Tollund Man and the Grauballe Man, described below, and involved in the excavation and examination of several other bog bodies, Glob (1969) wrote a synthesis of his experiences. This book, which provided an overview of the discovery of bog bodies across northern Europe, reached both academic and non-academic audiences, enticing them with the mystery and drama of these bodies. But who were these people interred in the bogs? What were their lives like? Why did they meet such seemingly tragic ends?

About 2,000 preserved human remains and artifacts (such as wooden kegs, bronze vessels, and weapons) have been recovered from bogs in northern Europe. While they span many different time periods, a large proportion have been dated to the time periods of the late Bronze Age (1100-800 B.C.E.), pre-Roman Iron Age (800-1 B.C.E.), and early Roman Iron Age (1-400 C.E.) (Pearson, 2001). These are the remains on which Glob focused. Since these eras span the transition from prehistory to history for the Germanic and Celtic cultures of northern Europe, much of what we know about them from written texts comes from Roman archival sources, specifically the writings of Roman historian Cornelius Tacitus (Glob, 1969). Tacitus wrote an account of the simple Germanic lifeways “as an example to debauched Romans” (Glob, 1969:141). While much of Tacitus’s writings have been corroborated through writing of others, such as Greek geographer Ptolemy, and through archaeological evidence, it is important to evaluate his observations for biases. At the time of Tacitus’s writings, the Romans were vying for Germanic and Celtic territory; therefore, it would have been beneficial for the opposing society to be seen by the Romans as simple and barbaric (Pearson, 2001).
Late Bronze Age - Iron Age Cultural Context

The archaeological record of the late Bronze Age and early Iron Age in northern Europe suggests that the Germanic and Celtic people lived in small villages usually governed by a chief or a “big man.” The societies mostly lived an agrarian lifestyle; they were farmers cultivating cereal crops and raising livestock, supplementing this food source with hunting and fishing (Reid, 2001). Differences in house sizes and burials suggest some degree of social stratification within communities (Bahn, 1997). The villages of the Danish Iron Age were laid out surrounding a village road. The houses were long structures (Figure 4) made of stone and wood, in which both people and livestock slept separated on each end (Glob, 1969). The tribal villages of the Celtic Iron Age societies followed a similar layout, although there is evidence of round houses rather than long houses (Figure 5) (Pearson et al, 2005).

Figure 4
Predictive drawing of a round house (Pearson, 2005)

Excavation of Iron Age long house (Glob, 1969)
Because of writers such as Tacitus and evidence found in the archaeological record, much is known about the ritualistic cultural lifeways of these societies. These aspects of their culture, in concurrence with housing and subsistence, play a major role in interpreting the circumstances surrounding the deaths and interments of the bog bodies. During the late Bronze Age and early Iron Age, the typical mortuary practice among Germanic and Celtic peoples was cremation. When an individual died, the living built a pyre for him/her and burned his/her remains. In the late Bronze Age, the cremated bones were removed from the ashes and packed in a variety of ways, some wrapped in cloth and others encased in urns. These bundles were then buried, in some cases in a mound with previously deceased remains, while others were buried under low mounds in a burial ground. As time progressed, the remains of the pyre and grave goods accompanied the remains to the grave, and in even later years some uncremated remains were inhumed with grave goods (Fischer, 1984; Glob, 1969). Who, then, are these individuals found submerged in the bogs’ acidic waters rather than burned or buried with the rest of their kinfolk?

Three Prominent Examples of Bog Bodies

Hundreds of human remains, both fleshed and skeletonized, have been recovered from the bogs of northern Europe, though many have been destroyed since their discovery. At least 123 have been reported in scientific literature and the popular press. Of these, 53 were found in Germany, 26 in Denmark, 17 in Ireland, 14 in England and Scotland, and 13 in The Netherlands, Poland, and Sweden. Some are complete bodies, while others are partial bodies or isolated appendages. Some have been studied by scientists but many have not. The individuals are both males and females who span many
age groups, the youngest being a three-year-old. The bog bodies often are referred to by
the place name of their discovery and their sex/age, such as Haraldskjaer Woman,
Huldremose Woman, Windeby Girl, Yde Girl, Clonycavan Man, Cashel Man,
Oldcroghan Man, and Kayhausen Boy (No Author, 2019). Among the most famous and
best documented are Tollund Man, Grauballe Man, and Lindow Man. The following
descriptions of these well-known specimens illustrate similarities and differences in the
characteristics of bog bodies, as well as the types of analyses conducted on some.

Tollund Man

In May of 1950, P.V. Glob was lecturing about archaeology at Arhaus University
in Denmark when he received a call from the local police department asking him to
venture to central Jutland to examine human remains that two farmers had uncovered.
Upon arrival at the scene, Glob was surprised to see the remains of a deceased man who
appeared to have just fallen asleep. These were the remains of Tollund Man (Figure 6).
Concluding the remains were not a recent murder victim, the remains were transported to
the National Museum in Copenhagen, where they were examined by Dr. Khud
Thorvildsen and his team (Glob, 1969).

The Tollund Man remains became a well-known bog body due to his incredible
degree of preservation. The soft tissues of Tollund Man are almost intact; only the hands
are skeletonized, displaying the specificity of bog ecology (Lobell and Patel, 2010).
Found 2.5 meters below the surface of a bog in Jutland, Tollund Man is an adult male
from the Iron Age. This infamous man was found lying in the fetal position, a common
position for burials during the Iron Age, clothed in only a leather belt and calfskin cap,
and baring a 1.25-meter-long leather rope encircling his neck (Fischer, 1984).
Initially, through autopsy, researchers Dr. Bjovulf Vimtrup and Dr. Kay Schaurup observed that the majority of Tollund Man’s inner organs were well preserved, including the heart, lungs, and liver. But the most remarkable portions preserved were the face, still retaining his eyelashes and beard stubble, and the brain (Figure 7). The skull and teeth were so well preserved that the individual was estimated to be about 20 years old at the time of death. Additionally, Dr. Hans Helbaek, a botanist, examined the stomach contents for evidence of the last meal Tollund Man consumed (Fischer, 1984). He ate a porridge or gruel made of vegetable matter (mostly barley, flax, false flax, and knotgrass) and, due to the degree of digestion, had done so at least 12 hours before his death. Further, it was determined that Tollund Man had suffered from intestinal parasites. Finally, during the initial examination Dr. Charles Bastrup x-rayed the remains, seeking to determine whether the cause of death had been strangulation or hanging, concluding the former (Aldhouse-Green, 2015).

At the turn of the 21st century, Dr. Niels Lynnerup began new examinations of the Tollund Man, as more information could be gleaned or clarified with technology not yet invented during the initial examination (Aldhouse-Green, 2015). First, the Tollund Man
was dated using radiocarbon, rather than chronologically associated plant matter, to 210 B.C. ± 40 years uncalibrated (Fischer, 1984). In order to re-examine cause of death, Lynnerup used CT-scanning and an infrared camera. With scanning he identified throttling from a broken hyoid, and with infrared he observed a V-shaped mark indicative of hanging (Aldhouse-Green, 2015).

Grauballe Man

Two years after the discovery of the Tollund Man, Glob was again called to examine remains found within a bog only 11 miles east of the Tollund bog in Denmark. In comparing the two Glob wrote, “It serves, like the Tollund man, to give an impression of how his man looked on the threshold of death, many years ago. This time the effect is not one of tranquility but of pain and terror” (Glob, 1969:39). The peat farmers who discovered the Grauballe remains had exposed the head, but in doing so, caused some damage to the skull. The body was situated in the peat on its chest, pointing north, with its head and upper body slightly raised (Figure 8). Unlike Tollund Man, he was positioned haphazardly, laying prone on his chest with one leg and arm bent, and no trace of clothing or grave goods were found with this individual (McClean, 2008).

![Figure 8](Grauballe Man - full body (Aldhouse-Green, 2015))
Immediately following his discovery, Grauballe Man went through much of the same examination as Tollund Man. The researchers’ physical examination and autopsy revealed that most of the internal organs were not preserved well, especially compared to Tollund Man. X-rays were taken to observe the skeleton and look for injury or disease. No pathologies were observed in the radiographs; however, two fractures were depicted, one on the back of the skull and one on the tibia. The pressure of the peat had warped some parts of the skeleton. The teeth were also examined, revealing dental caries. A depression on the back of the head and a wound spanning the width of his throat were found. Analysis of the stomach content indicated that Grauballe Man ate almost twice as much as Tollund Man before his death and that his meal consisted of a vegetable porridge with meat, as indicated by the presence of bone fragments (Fischer, 1984). Further, traces of ergot, a toxin that can cause hallucinations, were found in the Danish bog man’s stomach, suggesting a ritualistic aspect of his death to some researchers (Aldhouse-Green, 2015). After the initial examinations were complete, unlike Tollund Man, whose head was the only piece preserved, Grauballe Man’s whole body was preserved (Lynnerup, 2014).

Like Tollund Man, Grauballe Man was reexamined in 2001 and 2002. He was carbon-dated to 390 B.C. uncalibrated, and a microscopic examination of the density of his pelvic bone indicated his age to be 34 years old (Aldhouse-Green, 2015). CT-scanning revealed that the depression on his head and fracture on his skull occurred after death from the pressure of the bog. Further, CT-Scanning was used to analyze the teeth and revealed enamel hypoplasias, meaning there were times in Grauballe Man’s childhood when he was malnourished or afflicted with disease stress. However, the most
interesting discovery during the re-examination dealt with the stomach contents. The ergot in the stomach had been the focus of much previous speculation surrounding Grauballe Man’s death; however, it was determined that the levels of the toxin in his stomach were within the safety limits of modern Europe and therefore most likely did not affect Grauballe Man’s mental state (Dicks, 2003).

Lindow Man

Though not one of Glob’s bog people, but perhaps just as famous, this bog body was found in the County of Cheshire, England almost 30 years after the discovery of the two aforementioned Danish bog bodies. Lindow Man was the first largely intact bog body discovered in Britain. As with Glob’s bog people, Lindow Man was found by people harvesting peat. Unfortunately, the body was severed in half by a mechanical harvester and only the upper half was recovered for examination (Figure 9). It was determined that Lindow Man lived during the Iron Age and was around 25 years old at the time of his death. He was a strong, well-muscled man whose hair, beard and fingernails were well kept, suggesting he was not a laborer in his lifetime (Connolly, 1985).
Like the Danish bog people, researchers analyzed the contents of Lindow Man’s remaining alimentary tract. They determined his final meal consisted of much of the same, namely barley, wheat, and vegetables. Another similarity is that Lindow Man died in a violent manner. At the time of his death, Lindow Man was struck on the head with a blunt object. This impact was so great that it splintered three shards of bone from his skull into his now empty cranial cavity. He also was struck several times on the back of the neck. The head and neck blows were not the only injuries, as Lindow Man was strangled and had his throat slashed. However, unlike the two Danish bodies, there is evidence to suggest that Lindow Man was not buried but rather left face-down in a more shallow pool of water (Figure 10) (Aldhouse-Green, 2015).
INTERPRETATIONS OF BOG BODIES’ DEATH CIRCUMSTANCES

There are several hypotheses as to why these deceased late Bronze Age-Iron Age individuals were fated to the bogs rather than burning or burial. The first explanation is derived from the writings of Tacitus. Tacitus stated that in the Germanic tribes “the coward, the shirker and the disreputable body are drowned in miry swamps under a cover of wattled hurdles” (Germania XII, as quoted in Aldhouse-Green, 2001:117). This would be consistent with the highly moral culture said to be upheld by the Germanics and Celts. Tacitus reported that in these societies, which placed high value on warring practices, it was dishonorable to show fear or forsake one’s warring responsibilities and those who did often were hanged. This is consistent with many of the bog bodies found, such as Tollund Man and Lindow Man, who displayed evidence of hanging. Also consistent with the hypothesis that bog bodies were outcasts or dishonorables is the lack of clothing. During this time, people found guilty of shameful acts, such as adultery, were publicly stripped and flogged. Therefore, it stands to reason that the individuals found naked and hanged could be considered shameful outcasts of the societies (Reid, 2001).

However, critics note that this hypothesis does not take into account the fact that many prominent bog bodies have well-kept hands and nails and well-nourished bodies, suggesting them to be of higher status, rather than outcasts, within their societies. Some, such as Classical Greek author Strabo, suggested that these deaths may be related to the practice of augury or divination. Strabo wrote that these populations “used to strike a human being, devoted to death, in the back with a sword, and then divine from his death struggle” (Geographia IV, as quoted in Aldhouse-Green, 2001:83). It is well known that the Germanics and Celts were warring tribes, and is therefore possible that the elite
captured in battle might have been killed by their opponents to portend the future then disposed of in bogs (Pearson, 2001).

A third hypothesis about the deaths of the bog people also relates to religious motivations. Bogs are liminal spaces that “hover in the ‘tween spaces between land and water: they both are and are neither” (Aldhouse-Green, 2015:9), and liminal spaces often are seen as sacred. There is evidence to suggest the Germanic and Celtic populations viewed bogs in this manner. The Germanic and Celtic tribes’ religions were nature-based. For example, they revered groves as sacred spaces due to their beliefs that trees, with their ability to “die” in winter and yet survive to summer, hold mystical value. By the time of the appearance of bog bodies, water-based places, such as lakes, springs, and wells, were revered and were even points of pilgrimage. Offerings such as Iron Age weaponry and jewelry have been found in water spots all across Europe (Reid, 2001).

Further, it has been suggested that Iron Age peoples worshipped deities thought to reside in bogs. Specifically, Tacitus noted that a goddess of fertility, Nerthus or Mother Earth, resided in the liminal spaces of the bogs (Reid, 2001). She was believed to have governed the growth of crops, fertility of cattle, and change of season. Nerthus is not only depicted in rock cravings, but also in effigies found in bogs. One such effigy, found in 1961 by Harald Anderson, was formed from a forked oak-branch nearly nine feet tall. The hips and genitals had been carved into the branch just above the fork to depict the feminine goddess (Figure 11). Given the association of the goddess and the bogs, it is possible that the bog people served as sacrifice to the deities (Glob, 1969; Reid, 2001).

This is supported the stomach contents of some of the bog specimens. The last meals of both Tollund Man and Grauballe Man consist of a gruel made of grains and
vegetable matter but generally lacking meat or fruits. This suggest that the meals were prepared during the winter months. Further, internment in winter months would be consistent with the conditions required for preservation of bog bodies (Reid, 2001). This winter interment would be consistent with a sacrifice to a goddess by people hoping for the change of the seasons (Glob, 1969).

In sum, three main hypothesis have been proposed to explain who and why late Bronze Age and Iron Age individuals were interred in northern European bogs. It is possible that there were multiple motivations, and that the reasons varied over time and
space or by culture group. Regardless of the exact purposes their deaths served, a topic that will continue to be debated by researchers, it is clear that the people who became bog bodies played significant roles in their societies. As Pearson (2001:71) noted, “[the body] is used to convey representations of death and the afterlife, of society’s boundaries, of the nature of humanness, and of the ordering of the social world.” Interestingly, the bog bodies continue to be culturally relevant and symbolic in parts of Europe today.
REFLECTION IN MODERN TIMES

It is clear bog bodies played important roles in the societies in which they lived and died, but they also play roles in the societies that have removed them from the bogs. While bog bodies and studies of them represent impressive archaeological potential, their importance stretches far beyond their scientific relevance. Bog bodies can be seen as liminal as the acidic marshes in which they were deposited. They have the ability to straddle and connect two worlds – that of the Iron Age and the modern one. Despite the centuries that have passed, these bodies retain the features of the living: the stubble on their chins, the leathery skin, and stomachs still full of their last meals. As Anthony Purdy (2004:94) wrote, “bog bodies have the extraordinary power to abolish temporal distance; to make the past present.” This is the focus of the current section of this paper, the bog bodies’ significance in the present.

Information about the bog bodies reached a global public audience in the 1950’s when P.V. Glob published a book discussing the northern European bog bodies, concentrating on Denmark. Even though a scientist, Glob did not write a purely scientific report to discuss the bog body discoveries. Instead, his book was written more as a literary narrative. For example, when discussing his first encounter with the Tollund Man remains, Glob (1969:18) wrote “It was as though the dead man’s soul had for a moment returned from another world, through the gate in the western sky.” He did not discuss the remains as an archaeological find by denoting their stratigraphic context or the recovery methods employed, but instead he was driven to write about the soul of the man that had once lived. Unlike so many other archaeological finds, the preservation of the bog bodies forces a connection between the past and present that is difficult to ignore.
Irish poet Seamus Heaney felt this connection towards the bog bodies as well. Heaney is best known for a series of eight “bog poems.” Heaney often drew on themes of archaeology in his work and maintained an archaeological view of poetry, which he discussed in a collection titled *Preoccupations* (Heaney 1984). Heaney viewed “poems as elements of continuity, with the aura and authenticity of archaeological finds” (Heaney, 1984:41). Because of this approach to poetry, combined with his upbringing in bogland and his exposure to cultural unrest in the British Isles, Heaney made a conscious effort “to make a congruence between memory and bogland and, [Irish] national consciousness” (Heaney, 1984:54-55). This came to full fruition with the confluence of the political turmoil in 1970s Ireland and Heaney’s reading of Glob (1969). In Glob’s writing, Heaney observed an “archetypal pattern” that he was witnessing in modern politics, connecting the apparent intentional killing of the Iron Age people with the victims of political and religious persecution in 20th century Ireland, citing “long rites of Irish political and religious struggles” (Heaney, 1984:57-58). This connection is prominent in Heaney’s writing.

In his poem entitled *The Tollund Man*, Heaney (1972) drew a comparison between Tollund Man and four victims of The Troubles, a 30-year period of violent political conflict in Northern Ireland.

```
I could risk blasphemy,
Consecrate the cauldron bog
Our holy ground and pray
Him to make germinate

The scattered, ambushed
Flesh of labourers,
Stockinged corpses
Laid out in the farmyards,
```
Tell-tale skin and teeth
Flecking the sleepers
Of four young brothers, trailed
For miles along the lines.

In Tollund Man’s brutal death, Heaney saw the deaths of four modern men. These transgressors were “stockinged” or strangled using women’s stockings, a cause of death mirroring what was believed for Tollund Man at that time (Hunter, n.d.). This juxtaposition of the distant past to the present is a common influence of bog bodies. In a time of national turmoil and infighting, Heaney used the archaeological finds of bog bodies as something of a nationalist image. Although Tollund Man was not from the Irish boglands near which Heaney was raised, he came from the same Germanic heritage. Conversely, by comparing the atrocities the bog people faced with the atrocities faced by those persecuted in Northern Ireland, Heaney reflected a mirror on the society in which he lived. That is, he showed how similar the modern actions were to those from the past, considered by many as barbaric and grotesque (No Author, 2004).

Heaney’s poetic connections between his political climate and the bog bodies continued in his later writings. In the poem The Grauballe Man, Heaney (1999) begged two questions of his audience.

Who will say 'corpse'
to his vivid cast?
Who will say 'body'
to his opaque repose?

These four lines reference the pristine preservation of Grauballe Man when drawn from the bog. Like Glob (1969), Heaney could not help but to see the person, the individual, in the remains of this Iron Age find.
However, in the last stanzas (Heaney 1999) the audience is ripped from antiquity to the turmoil of the present.

\[
\begin{align*}
\text{hung in the scales} \\
\text{with beauty and atrocity:} \\
\text{with the Dying Gaul} \\
\text{too strictly compassed} \\
\text{on his shield,} \\
\text{with the actual weight} \\
\text{of each hooded victim,} \\
\text{slashed and dumped.}
\end{align*}
\]

Heaney (1999) pivoted towards atrocity as he focused on the modern deaths and suffering of his countrymen. He referenced the imprisonment and torture of 14 Nationalists by Loyalist paramilitary parties during The Troubles. These men were hooded in transit to prevent them from knowing their location, and they dealt with the physical and psychological effects of their torture long after they were released (McKay, 2015). Again, Heaney (1999) used the unique social and physical condition of the bog bodies to draw parallels to modern events. The men who experienced torture and imprisonment dealt with post-traumatic stress from the incident, and through the imagery of Grauballe Man, Heaney (1999) demonstrated how the injustice took from the men their souls and liveliness.

Heaney isn’t the only writer to link the ancient ones to the present day. In fact, recently when Lindow Man was housed in the Manchester Museum, the museum staff collected from patrons poetry focusing on the remains. Again, in these poems there is a tendency to connect antiquity to the present, such as in this piece by Poulson (2008).

\[
\begin{align*}
\text{Did Pete and his tribe take trophies?} \\
\text{Were their raiding parties ‘peace initiatives’?}
\end{align*}
\]

An American friend has never been able to grow her hair long. As a child she ripped it out and stuffed it in her mouth, almost choking – lost without the father on peace missions in Vietnam.
Poulson (2008) speculated on the culture of Lindow Man, nicknamed Pete, but in doing so reflected more on her own society than that of the Iron Age. She paralleled the violence of Lindow Man’s death to the violence seen by soldiers in the Vietnam War. As in Heaney’s (1972) The Tollund Man, by comparing these two acts of violence, Poulson (2008) demonstrated just how atrocious the acts of modern societies can be.
PROPOSED PROGRAM FOR FURTHER RESEARCH

In the final section of this paper I propose a new direction for the scientific study of bog bodies, a unique group of archaeological finds. This is necessary due to the lack of systematic analyses and the substantial amount of speculation in the hypotheses surrounding bog bodies. Researchers and artists alike seem to focus on one aspect of the archaeology or bioarchaeology of bog bodies, such as cause of death or facial expression, and build entire hypotheses around it without considering all the biological traits of the individuals and the cultural aspects of the societies in which the individuals lived and died.

For example, for decades scholars focused on what the presence of ergot in Grauballe Man’s stomach could reveal about the circumstances of his death. They proposed hypotheses of induced hallucination and ritualistic killing around this one piece of data without taking into account that the society in which Grauballe Man lived regularly consumed cereal crops that often contained low levels of ergot (Aldhouse-Green, 2015; Reid, 2001). These hypotheses persisted until Grauballe Man’s re-examination in 2001-2002, which indicated the low levels of ergot present would not have affected his mental state (Dicks, 2003).

In order to combat this narrow, speculative form of generating and evaluating hypotheses, I propose a new program of study that involves three goals. First, I propose an inventory of all bog specimen be completed. Second, in-depth bioarchaeological studies of bog bodies are needed. Finally, I propose that a framework of anthropological concepts and principles, such as the holistic perspective, be applied more consistently throughout bog body research.
To initiate this new approach to the scientific study of northern Europe’s bog bodies, there must first be a comprehensive inventory of what specimen are available for research. That is, what bog bodies have been discovered in bogland, which ones are still available for study, and in what condition are they? Pearson (2001:67) reported that there are “preserved corpses of over 2,000 individuals” but this number is much larger than indicated by other sources (e.g., No Author, 2019). Does this include disassociated body parts or whole specimens only? Where were these individuals discovered? What associated artifacts, such as wagons and weapons (Reid, 2001), have been found with the bog bodies? Many ambiguities still remain about the archaeological content of the bogs and a comprehensive inventory will help to resolve some. The comprehensive inventory should be an extensive and thorough accounting that may require a formal international conference involving all prominent researchers.

With this comprehensive inventory, the human specimens should be described as thoroughly as possible, including geographic, temporal, and demographic traits. I suggest the data be collected using the following categories: recovery variables, contextual variables, preservation variables, demographic variables, and associated artifacts. Recovery variables should include the date of discovery, how the remains were discovered, how they were recovered, and by whom (researchers’ names and affiliations). Contextual variables should include the bog name, bog type, landform, geographic location, time period, chronometric dates, depositional context, and body orientation. Preservation variables should include the state of preservation, body parts preserved, and any taphonomic alterations to the soft tissue or skeleton. Demographic variables should
include the sex, age, and social status of the individual. Finally, in order to provide further context, any associated artifacts should be listed, including clothing, bindings, and grave goods.

This initial inventory and categorization is important for advancing research on the bog bodies of northern Europe. Most importantly, it would establish an overall accounting of the minimum number of individuals or M.N.I. currently known from the bogs. The inventory would aid in delineating the geographic range and the temporal span of the bog interments. Not only would a comprehensive inventory identify important gaps in documentation and data about bog bodies, but it would also help determine appropriate sample sizes for more focused studies by helping to determine what is representative of the whole collection of specimens. An initial inventory generally would provide a base for further research and provide a better overall view of the bog bodies phenomenon.

**Bioarchaeological Analyses of Bog Bodies**

After compiling a comprehensive inventory of northern European bog bodies, the next step would involve in-depth bioarchaeological studies of the human remains themselves, along with archaeological studies of associated artifacts. Bioarchaeology is a specialization of biological anthropology that focuses on the study of human biological material, especially bones, found in archaeological contexts in order to glean information about the lifeways of past peoples. Bioarchaeologists seek to reconstruct as fully as possible the diets, health profiles, activity patterns, mortuary practices, population histories, and social organization of past individuals and human groups based on osteological, genetic, biochemical, histological, and other analyses of human remains (Larsen, 2015).
Some bog bodies, like Tollund Man, Grauballe Man, and Lindow Man, have undergone general scientific examinations in the initial and subsequent studies of the remains. This yielded data such as the specimens’ ages at death, traumas they endured, and foods they ate. However, I propose a focus on systematic, comprehensive bioarchaeological studies of bog bodies to generate data about the multifaceted lifeways of the individuals and, by extension, the cultural groups to which they belonged. These studies can answer questions as diverse as where an individual grew up, the individual’s social status, and activities in which the individual engaged during his/her lifetime, such as wear on lower limb joints that indicates the individual had a highly mobile lifestyle (Larsen, 2015).

I propose that each bog specimen undergo a bioarchaeological study examining age, sex, ancestry, diet and nutrition, pathologies, traumas, activity patterns, antemortem alterations (e.g., tattooing, cranial deformation), and postmortem alterations. Such data are then used to propose interpretations about the lifeways of past individuals and groups, such as social organization, interpersonal conflict, and settlement strategies. For example, a researcher can examine the pathologies present in an individual, and, by extension, the health profile of a past population, through thorough examination of the soft tissues and skeleton, such as Harris lines on long bones suggesting a state of poor health during an individual’s life. Similarly, a disease can be expressed as highly porous bone tissue associated with syphilis or even the distortion of bones such as the crushing of the vertebral bodies indicative of tuberculosis. A study of paleopathology can help show how an individual lived and perhaps indicate illnesses. This bioarchaeological approach
should be standard across all studies of bog bodies. It does not need to be limited to skeletonized remains, either.

Though many bioarchaeological studies focus on skeletonized human remains from archeological contexts, this form of study can be applied to fleshted bog body remains using modern radiographic and imaging technologies. For example, the porosity discussed earlier can be observed under x-ray imaging. Additionally, other methods for studying soft tissues can used to create a broader understanding of the individual. DNA analysis can be done to examine the ancestry of the individual and perhaps identify any unique genetic conditions. Bone chemistry analysis can reveal information about diet and environmental conditions in which the individual lived. By employing these more extensive research methods the nature of the body body database and the potential research questions that could be investigated would be greatly increased. Further, these methods would clarify and standardize the way we examine bog bodies and give researchers points of comparison for more specific studies.

**Anthropological Framework**

The final aspect of this proposal for a new approach to the study of bog bodies involves the application of a framework of anthropological concepts and principles to the research being done and the hypotheses being proposed and tested. Within the field of anthropology there are several concepts that govern the research and work produced. These help not only to distinguish the anthropological field from other fields studying humanity, but also to ensure the work done is thorough. I propose that these concepts, four in particular, be applied more intentionally to the study and interpretation of bog bodies. The four I will discuss are the comparative approach, relativism, the biocultural
approach, and holism. All four of these concepts are used throughout the anthropology discipline and would benefit the study of bog bodies in archaeological, bioarchaeological, literary, and cultural contexts.

The first of the concepts deals with research approach of those endeavoring to study bog bodies. I propose researchers use a comparative approach to the study of bog bodies, a phenomenon that crosses many geographic, temporal, and demographic categories. Instead of focusing on only single bog body specimens, the comparative approach is used by researchers to compare and contrast variously delineated human groups or populations to answer a question. This might involve comparing bog bodies from one region but representing different time periods, comparing a sample of specimens of the same time period but from different regions of northern Europe, or comparing adults with subadults, males with females, or low-status with high-status individuals in a given place and/or time period. Through using a comparative approach, researchers can determine patterns of similarities, which can indicate cultural affiliations and interactions, and the nature of differences between populations, which helps to distinguish among the behaviors and practices of cultural groups or changes throughout time in a particular group. This aids researchers in drawing more clear conclusions from the data they collect.

By utilizing a comparative approach, a researcher is able to generate more information – information about patterns of similarities and differences – than from a study of only one individual or of individuals separately. Given this greater number of data points, the hypotheses proposed can be more specific and the interpretations drawn will be less focused on one specific event and more on the human group or culture as a
whole. For example, a researcher might compare the lifeways of Pre-Roman Iron Age Germanic bog bodies with those of Pre-Roman Iron Age Celtic bog bodies. Through this comparison, similarities and/or differences could be discerned in the treatment and cultural contexts of the bog bodies by different archaeological cultures. In another vein, by studying bog bodies deposited in the Pre-Roman Iron Age compared to those of Roman Iron Age of the same region or society, researchers can observe how and why the practice changed over time. There could be a significance in the aspects that remain unchanged and those that differed.

Further, in the study of modern literature a researcher may compare the variances between male and female writers or perhaps those writing in different decades to observe how the characterization, interpretation, and analogizing of bog bodies varied among the different demographics. The social status and the expertise of the writers could influence their writing, as well. Heaney is a trained and experienced writer, while those submitting pieces to the Lindow Man exhibit likely were amateurs. An examination of how the two groups compare may reveal thematic, semantic, and syntactic similarities and differences in their writings about bog bodies.

In sum, by using a comparative approach to the study of bog bodies, researchers will be better able to understand more about a culture as a whole than they would through a singularly focused study. The comparative approach enables a researcher to understand such a large subject as the bog body phenomenon in greater context.

The second important anthropological concept is relativism. Relativism is the attempt to understand an aspect of a culture or population within its own biocultural context. Relativism requires that the researcher suspend his/her personal cultural biases,
judgments, and explanations in an attempt to more accurately understand another culture or population in its own terms. As humans we are conditioned to view our own culture as the norm, and therefore any cultural practices outside of our norm are often viewed negatively or are viewed as immoral, irrational, or illogical. This tendency of people to view other cultures through their own cultural experiences and lenses is called ethnocentrism, and relativism is a methodological approach intended to counteract this view. The scholarly and literary discussions of bog bodies are riddled with ethnocentric interpretations of the evidence found on or with the specimens.

An example of this can be seen in the interpretation of Lindow Man’s remains. Scholars interpreted that the evidence such as well-kept nails and hands meant that he had not been a laborer during his life and was likely of a higher status within his community. Therefore, he was not an outcast in that society (Connelly, 1985) and instead was a victim of an augury or divination (Pearson, 2001). This is a highly ethnocentric view as it makes the supposition that being of high social status prevents an individual from being an outcast. Perhaps this was true in the Iron Age society, but perhaps it was not; additional evidence is needed to make this determination. Regardless, researchers must remember their cultural perspectives and biases and attempt to prevent them from influencing their interpretations about other cultural groups in the past.

The tendency toward ethnocentrism can also be seen in the bog-themed modern literary works discussed previously. Writers focused on the violence apparently inflicted on the bog bodies and assumed it was done out of hate and malevolence, like the conflict that was seen in their own societies. However, like the relation of social status to an outcast, there is not enough information to make those conclusions. While these could
have been violent killings of dishonored outcasts, sacrifices could have been based on a religious belief that those individuals held a position of honor or otherwise benefitted somehow from their fates, such as obtaining immortality or peace in the afterlife. Again, contextualized research may uncover the answers to these questions, but until then scholars need to be more intentional in their approach to the discussion of bog bodies and remember that the events and their motivations are relative to the social contexts in which they occurred.

The third concept is one frequently employed by anthropology and one which differentiates it from many other fields of study. This concept is termed the biocultural approach and describes how a researcher should examine and consider simultaneously both the biological and cultural aspects of a topic of study. Humans are biocultural beings meaning that both systems, biological and cultural, influence and shape one another and the individual. Human biology inextricably affects human culture, and visa versa. The previous research on bog bodies has made limited attempts to explore how these two aspects of bog bodies influenced one another.

When discussing the enamel hypoplasia lines present on Grauballe Man’s teeth, researchers stated that these occur biologically due to the individual having experienced malnourishment during times of physical development (Dicks, 2003). What was not made clear is what culturally caused these periods of malnourishment. Was there simply not food available, was the malnourishment associated with a dietary change such as weaning, or was Grauballe Man denied access to this food for a social or another reason? How did the tooth enamel defects affect his mastication and resistance to chewing stresses throughout his life, and did that influence what he could and could not eat during
his lifetime? Did the defects make him more susceptible to other dental pathologies? By studying the cultural context of an individual we may find answers to biological variations, and vice versa.

The biocultural approach is important in osteological studies of how cultural activities impacted the skeleton and how skeletal traits permitted or prohibited certain physical actions by individuals like the bog bodies. The amount of wear-and-tear of synovial joints in the body can reveal how physically active a person was in life, and the patterning of joint degradation can indicate in what activities the individual participated consistently. This biological information, in turn, can indicate cultural information such as occupational specialization and social ranking. The lack of joint wear in Lindow Man’s remains, for instance, indicated he did not engage in repetitive strenuous activity. It also suggested he was a higher status, but was this status social or religious, achieved or ascribed? Was he a member of the cultural group that committed him to the bog or was he foreign to them? Through the study and connections of the biological and cultural aspects of an individual’s life the researcher can better understand the whole biocultural system of an individual and population.

Related to each of the previously stated anthropological concepts is the final one that should be part of future bog bodies research. This is the concept of holism. Holism encompasses the idea that the whole picture of humanity matters. This means that one part or aspect of a human individual, cultural group, or population cannot be understood without considering the whole, as all parts function within the context of the whole. This “part” and “whole” might be a robust bone in the biological system of an individual, or an individual in his/her village community, or a village community functioning within its
regional society. Regardless of what the “part” and “whole” are, the idea of holism demonstrates how one part of a whole is related systemically to the other parts. In the study of bog bodies, there has been little attention paid to using a holistic perspective to investigate research questions, especially those related to the bog bodies’ death circumstances.

It is possible that the absence of a holistic approach in bog bodies research is due, in part, to the dearth of information on late Bronze Age and Iron Age societies in northern Europe as the whole. While there has been considerable archaeological research on the more grandiose aspects of Bronze and Iron Age Europe, such as the fortresses and monuments, less has been done on the less conspicuous aspects of everyday village life. This knowledge is critical to understanding a phenomenon such as bog bodies. How do these particular mortuary practices relate to the technologies, subsistence practices, settlement strategies, trade practices, social organizations, and belief systems of the people who practiced them?

For example, if Iron Age societies did indeed sacrifice bog bodies to the deities of the bogs, then data about their religious beliefs and their subsistence practices as farming communities rather than hunter-gatherer communities could be highly relevant. As farming communities they were reliant on successful planting, tending, harvesting, and storage, all of which were integrally tied to the cycling of the seasons. In order to ensure the this and next year’s harvest, they may have felt the need to appease the deity responsible for the changes of season. Therefore they offered sacrifices – bog bodies – to such deity ensuring their survival. Had they not been reliant on the crops they would have had no need for sacrifice. Further, there could be relationships between bog interment and
other cultural variables such as gender and social stratification. If this society worshipped a female goddess it might explain the ratio between male and female bog bodies found, as one gender may have been believed more suited as a sacrifice. Social stratification could also have played a role in the selection of sacrifice; however, there have been variations in the social status of known bog bodies, which begs the question of who was suited for the role if this was a sacrifice during a specific time, in a particular place, or within a specific cultural group.

While religious sacrifice is just one possible explanation for the deposition of bodies into the bog, any other explanation would be linked to some other aspects of their culture. Therefore, it is highly important to consider the potential impact or relevance on bog interment of as many cultural and biological aspects as possible, which is what the concept of holism prescribes.

In sum, by using the biocultural and comparative approaches, by employing relativism, and by holistically considering as many aspects of a society as possible in studying the phenomenon of bog bodies, researchers will have a better chance of developing evidence-based, accurate interpretations of ancient bog interments in northern Europe. Through the holistic consideration of information, researchers can better interpret the context of the bog bodies he/she is studying and therefore maintain a more relativistic viewpoint.
CONCLUSION

When archaeologist P.V. Glob received the call out to central Jutland in Denmark, he was called to an amazing archaeological find that would make his professional career and forever influence the study of northern Europe’s ancient bog bodies. These bog people, appearing to have just fallen asleep beneath the sphagnum in their near-perfect states of preservation, were ready to reveal the secrets of the past. While they have shed light on many aspects of late Bronze Age and Iron Age life, they also sparked a lot of controversy in terms of interpretation of their death circumstances. Perhaps the late Bronze and Iron Age societies believed the bogs were inhabited by the gods and a sacrifice was the only way to ensure the upcoming harvest. Or perhaps the bogs were viewed as a shameful burial for the outcasts of a society. Given the bogs’ status as a liminal space during this era, it is unlikely that these great finds were not of some importance.

It is apparent the bog bodies held some significance in the societies in which they lived. In the modern era, literary artists have attempted to understand these late Bronze Age and Iron Age individuals relative to their own lives and experiences. However, many products from these artists reveal more about the authors’ society than their subjects. For them, the point of the archaeological discovery of a bog bodies is not in the discovery of its beginning, but rather in a representation of the discourse that they face daily.

As research continues on the topic of bog bodies, some revisions need to be made in the approaches researchers are taking. While many examine only one specimen or one aspect of late Bronze Age or Iron Age life, a more comprehensive program would yield greater results in determining the significance of bog bodies. In order to do this,
researchers must first understand the extent of remains and knowledge available, which will take the form of a comprehensive inventory of all bog-related bioarchaeological and archaeological finds. Further, the research program must be standardized and follow standard bioarchaeological research protocols for the analysis of bog bodies. And finally, there must be an overall shift in the mindset and practices surrounding bog body research through the intentional application of anthropological concepts, such as the comparative approach, the concept of relativism, the biocultural approach, and the holistic perspective. Following this approach, researchers would gain a more expansive knowledge of the context of bog bodies and therefore be better equipped to formulate and test hypotheses and to tell the most accurate stories about the bog people as possible.
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