Cover image:
Terracotta sculpture, Hellenistic, fifth century BCE
"Gargouille en forme de tête de lion"
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Photo credit: Petit Palais, musée des Beaux-Arts de la Ville de Paris,
Acquired by Auguste and Eugène Dutuit, 1902 (ADUT300).

Chronika, Volume XI

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Letter from the Editor

We are proud to present the eleventh volume of the Institute for European and Mediterranean Archaeology's Graduate Student Journal, *Chronika*. This has been a uniquely challenging year, and we hope that the continued publication of this journal will bring, in a small way, a semblance of normalcy. The COVID-19 pandemic has challenged us all, whether directly, or indirectly, and has not spared the archaeological community. The authors who were selected to publish with us this year showed exceptional resilience; we are grateful to them for their hard work.

The articles included in this volume come from graduate students in the United States, Poland, and the United Kingdom. They cover a variety of methods and themes, including numismatics, gender, rituals, and experimental ballistic analyses. The time periods discussed range from the Mediterranean Bronze Age to the colonization of the Americas.

My tenure as editor-in-chief is coming to an end with this eleventh volume and I am grateful to my associate editors for their diligence and patience, and to Heather Rosch, Peter Biehl, and Tamara Dixon, whose continued guidance has been invaluable.

As always, many thanks are also due to the peer-reviewers and to our sponsors for helping the journal continue to be a success.

Mélanie Lacan

Editor-in-Chief

Seat of Power: The Afterlife of the Achaemenid Throne on Minted Coinage

Brittany Proffitt

In this article, I argue that the image of the enthroned Achaemenid Great King from the Apadana Audience Relief *in Persepolis is incorporated and reused first on the satrapal coinage of the late Achaemenid Empire, then by Alexander the Great and his successor Lysimachus till it enters the iconographic language of Roman Imperial coinage. While the symbolism of the* Audience Relief *within the Achaemenid Empire has been examined to some extent, direct tracing of the Audience Relief's appearance on coinage from Persia to Rome has not been undertaken. I demonstrate how the iconography of the Achaemenid throne maintains its significance as a symbol of regal authority, even as it shifts from a motif of Achaemenid legitimacy to a sign of a generalized right to rule in Greek and Roman coinage. I also describe the unique physiognomy of the throne itself, whose features are the clearest representation of the* Audience Relief's *usage. Finally, I demonstrate that the* Audience Relief *motif's longevity and adaptations became synonymous with ideas of power and right to rule, aspects that numerous subsequent rulers, Persian and non-Persian alike, adopted for themselves.*

This article aims to trace the repeated usage of the Achaemenid royal throne on coinage from the Achaemenid through the Roman Empires. While similarities between the coinages of the Persian satraps and Alexander the Great have been previously noted,[1] this is to my knowledge the first attempt at demonstrating the continual presence of the Achaemenid throne on coinage straight through to the reign of Julius Caesar. I will focus on the throne's evolved usage starting in the sixth century BCE with the *Audience Relief* from the Apadana in Persepolis. While not the first such audience scene of its kind, the *Audience Relief* in particular provides us with a centralized message of the role of the Achaemenid king as master of his empire and uses the Achaemenid royal throne as a key facet of that portrayal. This article builds on the monumental work on the art and architecture of the Achaemenid Empire that has already been conducted by the likes of Margaret Cool Root and Margaret Miller by expanding on the message and meaning behind specific Achaemenid motifs and examining how other cultures adopted these motifs for their own use.[2] I focus on the *Audience Relief*'s abbreviated form and its representation on coinage from the Achaemenid to the Roman Empire, which is signaled primarily by the continued usage of the Achaemenid throne. The location of these objects is given close attention, as is the *Audience Relief*'s possible modes of transmission between the different cultures of the Mediterranean. It is my goal to demonstrate that this Achaemenid motif, which depicts a particular conception of royal power, was adopted and adapted in the centuries following the Achaemenid Empire. Although the original context and meaning for the motif was undoubtedly no longer fully understood by the time of the Romans, I demonstrate that the imagery was still used to display a sense of regal authority and right to rule.

The Apadana *Audience Relief*

The *Audience Relief* discussed here is not the only example of a king sitting upon a throne; examples of similar constructions can be found in Babylonian and Egyptian art. However, as Root points out, the Apadana's *Audience Relief* is currently the only example of such a motif in monumental form for which we have clear documentation.[3] While the *Audience Relief* may not be the precise origin for the coinages being discussed herein, it can certainly be described as a primary source.[4] While the exact date of the Apadana reliefs is still an ongoing discussion, the general suggested range seems to center around the end of the sixth century BCE.[5] Achaemenid king Darius I is thought to have designed the

Figure 1. Audience Relief scene, Central Panel. Apadana Palace, Persepolis. Courtesy of livius.org.

sculptural program of the large hypostyle hall known as the Apadana and was possibly responsible for its construction.[6] The exact date and builder for the Apadana reliefs is not of particular importance to this article, but rather the focus here is on the composition and underlying message of the *Audience Relief.* The Relief itself is located on the North Stairs of the Apadana, which lead to the large audience hall beyond. In the relief, the Great King is depicted larger than life in the central panel.[7] He is enthroned with his feet resting upon a footstool, while holding a lotus in his left hand and a scepter at a slant in his right. Behind him are the Crown Prince, a Magus, and a weapon-bearer who is thought to be holding the Great King's bow.[8] The throne and scepter are both important insignia of the Great King, and elsewhere at Persepolis the King is often depicted enthroned with these items.[9] The left panel (wing A) of the relief depicts the Great King's guards and courtiers, while the right panel (wing B) depicts various embassies from across the Achaemenid Empire bringing tribute to the Great King. These subject peoples are wholly generic representations, differentiated only through their dress or the items they carry. However, these subject peoples appear commonly in Persian relief sculpture, as the variety of subjects within the Achaemenid repertoire was limited consisting of the Great King, attendants, the crown prince, nobles, military figures, and subjects.[10] The sculptural program of Persepolis (and by extension the Apadana Palace) was seemingly designed for non-Persian visitors, "…to convince them not only of their totally subservient position, but that it was the king rather than his god to whom they owed allegiance."[11]

What is seen in the *Audience Relief* may be an analog for the events that might have taken place in the real audience hall beyond, though perhaps on a more limited scale as it is doubtful that so many different embassies would be at Persepolis at once. Most critical is the underlying message of the sculptural program. The seated image

of the Great King in profile has potential origins in Assyrian, Babylonian, Egyptian, and possibly Mesopotamian art.[12] Farkas notes that while the similar compositions of enthroned kings might be simply coincidental (as there are only a limited number of ways to depict such an image), the fact that the motif was common in neighboring cultures implies it was adopted by the Achaemenids, rather than invented by them independently.[13] Rather than create such a motif themselves, the Achaemenids seem to have adopted royal iconographic conventions long established in the region, and used them to 'bestow an archaic authority' upon their rule.[14] The overall Achaemenid ideological program focused less on the realities of empire and more on an idealized vision aimed at political persuasion.[15]

This idealized vision of rule certainly seems to apply to the *Audience Relief.* Two separate interpretations have been offered for this relief, both of which are plausible, and both of which seek to convey a message of imperial harmony and the rule of the Great King over his subjects. One interpretation suggests that the *Audience Relief* possesses a message of harmonious imperial order richly shaded to suggest a divinely sanctioned and piously applied covenant of rulership.[16] Root has also suggested that the roles of everyone depicted have been raised one level in the hierarchy: the Great King has assumed the status of the focal divinity in the composition, the courtiers become minor deities, and the embassies become suppliants whose gifts take on the value of votive offering,[17] which also fits with Boardman's interpretation that such reliefs were meant to message to non-Persians that they owed allegiance to the Great King above all.[18] Whether this was indeed the intended message of the relief, gift giving does seem to play an important role both in the composition of the work and in Persian culture more broadly. As Miller notes, giving gifts was a crucial element of hospitality within Persian diplomatic exchange, and its inclusion in the *Audience Relief* reinforces

the importance of patronage between the Great King and his subjects.[19] However, it was often the Achaemenid king who did the gift giving, not the subjects, as we see in the *Audience Relief*. This seeming reversal of an essential symbol of hospitality within Persian culture brings us to the second possible interpretation of the *Audience Relief*.

The second interpretation suggests that certain items depicted in the *Audience Relief* correlate to features of a military camp. In particular, Jamzadeh claims that "the presence of the implements of an audience at the camp, that is the stool, the rugs and the men with whips, further stresses the format of an audience euphemizing the brutal conquest" of the subject peoples.[20] In this context, it makes more sense that the embassies are seen bringing items to the Great King, and not the other way around. Jamzadeh's suggestion is that a viewer of the relief would understand that the men in wing A who stood behind the king had a hand in the conquest of the subject peoples depicted in wing B.[21] I find the second interpretation to be slightly more compelling, the *Audience Relief* contains elements that suggest military conquest, such as the presence of conquerors and the conquered. However, the depiction of the footstool does not occur with any frequency on adaptations of the *Audience Relief*, and is absent on later coinage that adopts the image of the enthroned Great King, implying that this particular image of Achaemenid rule was superfluous to a simplified version of the *Audience Relief*.

Rather, the Achaemenid throne on the *Audience Relief* is one of the most defining features of the scene and is a central element for identifying the reuse of the motif in later contexts, as both a recognizable visual element and a clear expression of regnal power. The throne in the *Audience Relief* is high-backed and rests on a dais. The legs are the main distinguishing feature of the throne, and the design has a fixed, recognizable formula. In fact, this formulaic leg design appears on every depiction of a Persian royal throne, footstool, or dais, and suggests that the design was ascribed to royalty and possibly signified the dynastic throne. The aspects of this formula are many and complex, so I will only discuss the main identifying features here.[22] The primary distinguishing element of the leg design is the series of "rolls" resting upon a lion's paw.[23] These rolls seem to suggest woodwork, but as Miller notes, "the discovery of thick metal rings at Altintepe [modern Turkey], evidently the projecting 'rolls' of the legs, suggests that the furniture should be understood as in origin a metal type, and only in imitation executed in wood."[24] The base of the leg is a short cylinder, above which rests a 'drooping sepal' motif, a slightly conical, rounded shape. All of these elements combine to make an easily recognizable form, even on items such as coins which do not depict objects with the greatest of clarity. It is the presence of this throne that allows us to trace the evolution and reuse of the *Audience Relief* through subsequent coinages.

The *Audience Relief* in the Persian Empire

Within its original context, the *Audience Relief* seeks to convey a message of imperial harmony and to reinforce the role of the Great King over his subjects. On a broader level, motifs such as the *Audience Relief* seem to have been disseminated throughout the Achaemenid Empire; however, these motifs were regularly modified and selectively adopted to suit the needs of the locals.[25] The contact between Persepolis and the outer reaches of the empire appears to be reciprocal, based on the archaeological evidence that survives. We see a manipulation and revision of the royal iconography in different contexts and mediums, instead of a uniform copying of the official iconographic program, as local officials sought to emulate court models to further their own positions.[26] The ability to copy and modify the iconography suggests that the original meaning of the image is so well-known that individuals have room

to modify it slightly. The use of the Great King on one's own commissions (be they coins, rings, wall paintings, etc.) provides the issuer with an understood level of authority, as an extension of the Great King. In particular, the *Audience Relief* from the Apadana is frequently used by elites in the outer portions of the empire to deliberately associate themselves with the ideal of the Great King.[27] It is important to note that the exact method of transmission from the Apadana to the outer provinces is unknown, and eventually was likely a

situation where copies were being made of other copies, not of the original *Audience Relief*. However the image was transmitted, we find an abbreviated form of the *Audience Relief* from the Apadana in a variety of excavated goods across Asia Minor (see n. 23), and all of them are missing key features of the original *Audience Relief*: gone are the Crown Prince, the attendants, the courtesans of wing A, and the diplomatic envoys and subjects of wing B. We are left only with the foundational image of the seated Great King with his throne, footstool and scepter. This simplified version of the *Audience Relief* is also repeatedly modified by the individuals who adopt and adapt it to fit their needs and is the beginning of the modification and adaptation process that we can follow on coinage through to the Roman Empire. This simplified usage occurs in a variety of Achaemenid media, but I wish to focus in detail on the coinage of several Persian satraps, as it is the clearest example of continual reuse of the *Audience Relief* and the Achaemenid throne that we possess.

Figure 2. Achaemenid chair leg. Courtesy of the Israel Exploration Society.

The Satrapal Coins

The coins in question were struck in Asia Minor, primarily in Cilicia, and do not resemble the official Archer type coinages of the Achaemenid kings in any way.[28] Despite this, it is generally accepted that the minting of satrapal coinage was at least tacitly allowed by the Achaemenid kings.[29] This implies that while the Great King was the central authority of the Achaemenid Empire and could mandate official portraiture, Achaemenid coinage relied on more *ad hoc* minting by regional authorities. Satrapal coinages were minted in a wide variety of locations under the authority of numerous local officials, and as such are in no way uniform in terms of iconography, weight, or metal composition. The *Audience Relief* appears on the coinage of three different Persian satraps, all of whom were active in the western Achaemenid Empire in the fourth century BCE. It is possible that this was a regional trend, but given the general lack of Achaemenid coins in

Figure 3. Obverse of Pharnabazus II stater, 370 BCE. Courtesy of the American Numismatic Society.

the archaeological record, it is hard to say whether the *Audience Relief* appeared on satrapal coinages from other areas of the empire. These three satraps, Pharnabazus II, Datames and Mazaeus, all minted stater coins with the image of the deity Baal enthroned on the obverse. On each coin Baal (sometimes referred to as Baaltars, or "Baal of Tarsus") is enthroned on what is clearly the Achaemenid throne, based on the archetypical legs. All three Baals are dressed in Greek *himatia*, and each holds a staff topped with an eagle. The staff has the same rounded appearance as the scepter of the Great King depicted on the Apadana. The eagle is a new addition to the motif, but as Harrison notes, the staff, eagle and *himation* are all attributes of Baal.[30]

It is likely that the motif of the enthroned Great King was used as a model for these local coins, as demonstrated by their similarities in composition and accoutrements. However, the Great King's image was altered dramatically to suit a regional audience that had close, ongoing interactions with Ionian Greeks. The Greek himation seems to be a prime indicator of this, as does the presence of the eagle, a bird long associated with Zeus. The positioning of Baal is also reminiscent of Greek sculptural style. The combination of

the frontal view of Baal's torso and the rest of his body in profile has visible parallels to Zeus on the Athenian Parthenon frieze (see Figure 6), which predates these coins by a century, a connection that demonstrates that the Athenians at least were familiar with Persian iconography (see the section on the *Audience Relief* in Greece, below).[31] It is worth noting that on that same frieze, Zeus is the only figure depicted on a Persian-style throne, while the other gods are seated on more traditional Greek stools. Kyrieleis argues that Zeus' seat echoes the Persian-style throne based on the presence of a thin fillet on the legs that creates the curved contours that are easily identifiable in the rolls of the *Audience Relief*'s throne.[32] This sort of fillet is found nowhere else in Greek furniture of the period.[33] Considering that the Parthenon was in part constructed as a result of Athens' victory over Persia in the 5th c. BCE, the inclusion of Achaemenid iconography is an understandable influence, and a way for the Athenians to broadcast conquest of the Persians in their own iconographic language. I do not claim that the Parthenon directly inspired the depiction of Baal on the satrapal coins; rather, the close interaction between the Greeks, the peoples of western Anatolia, and Persepolis

Figure 4. Obverse of Datames stater, no date. Courtesy of the American Numismatic Society.

Figure 5. Obverse of Mazaeus stater, 361-333 BCE. Courtesy of the American Numismatic Society.

has a noticeable impact on the composition. The design is based off a Persian sculptural depiction of the Great King that has been adopted by several satraps and modified to depict a local Anatolian deity with distinct Greek attributes. We know based on the legend of these coins that this is in fact a representation of Baal of Tarsus,[34] but to a Greek eye he appears to be Zeus, and the Persians may have identified him as Ahura Mazda.[35] The fact that the design may have represented different deities or ideas to different audiences adds to the complexity of interpretation. However, the use of the *Audience Relief* in regions far from Persepolis suggests that the ideas it conveyed were understandable and useful for a variety of viewers.[36]

I will briefly discuss the needs of Pharnabazus II, Datames and Mazaeus as satrapal issuers, in order to demonstrate the variety of ways the *Audience Relief* was adapted. The first of the three to issue the seated Baaltars stater type was Pharnabazus II, satrap of Phrygia. Between 378 and 374 BCE, Pharnabazus II was in joint command of preparations for an expedition against Egypt. Despite his role as satrap of Phrygia, his Baaltar coins were minted in Cilicia, most commonly at Tarsus, where the preparations were based. The location of

these mints no doubt influenced Pharnabazus II's choice to place Baal on his coinage. The use of Baal was not a new innovation, but his enthroned position is.[37] Pharnabazus II minted large quantities of coinage at Tarsus, so his depiction of the local deity Baal is a straightforward one. In addition, as Bing notes, there were 20,000 Greek mercenaries in the Persian force who would be paid with said coinage.[38] The ambiguity of Baal's appearance allowed the Greek mercenaries to associate the divine authority behind the coins with their own god Zeus, not a foreign one, or (perhaps worse) with a foreign king. However, the connection to the Great King is still present in the throne, as well as the overall similarities with the *Audience Relief*. The connection is also supported by the fact that Pharnabazus II was minting these coins as part of his service to the Great King.

Datames, satrap of either Cilicia or Cappadocia,[39] assumed sole command of the expedition in 373 BCE, and continued minting Pharnabazus II's coin types until Datames revolted from King Artaxerxes II in ca. 369 or 368 BCE. Datames began minting completely new coin types, which he continued to produce until his death ca. 360 BCE. The obverses still featured the seated Baal, as they were produced in the same Cilician mints. The real change in messaging occurs when viewed in connection with the coin type's reverse. The reverse depicts Datames and the god Ana,[40] possibly a sky deity that was synonymous with Baal for the Cilicians. Ana points at Datames, who points at himself. The underlying message here is that Datames is attempting to justify his revolt against Artaxerxes II by claiming that he was answering the divine command of Ana (Baal).[41] In this instance, the image of the enthroned Great King, already modified by Pharnabazus II, is further divorced from its original messaging. Instead of using the *Audience Relief* to support his position locally *within* the bounds of the Great King's authority, as was previously done, Datames uses the iconography to support his own position *outside* of the control of Artaxerxes II.

After the death of Datames, Mazaeus was appointed as the next satrap of Cilicia. The obverse of his stater, minted primarily in Tarsus, is almost identical to the Baal on the coins of Datames, in what at first glance appears to be a message of continuity with his predecessor. However, this Baal has rays around his head, which may have been an attempt to associate the 'radiate' Baal of Tarsus with the Persian deity Ahura Mazda.[42] The reverse, however, depicts the iconographic motif of a lion fighting a bull that is also visible framing the Apadana Audience relief in Persepolis. Bing argues convincingly that Mazaeus' use of the lion and bull motif and the 'radiate' Baal demonstrate Tarsus' close connection with and loyalty to Persepolis.[43] Though his obverse is extremely similar in style to that of Datames, the message of Mazaeus' Baaltars stater seems to be one of restoration and return of Tarsus (and Cilicia as a whole) to the imperial fold.

By the mid- to late- fourth century BCE, the image of the Great King sitting on a distinctly Persian throne had been adopted and adapted by officials in western Anatolia for their own personal use. These coins demonstrate the flexibility and multiplicity of meaning in the *Audience Relief*. Pharnabazus II, Datames and Mazaeus all use obverse images that seem to derive directly from the enthroned Great King, but are adapted to suit the needs of the audience for which the coins were minted. Instead of the Persian Great King, all three satraps use the image of the local Cilician god Baal of Tarsus seated on a throne. This may have been aimed at the Cilician people or perhaps Baal was selected because many of the coins minted were produced in Tarsus. In addition, this originally Persian motif depicts a local Cilician god with distinctly Greek features. All three satraps seem to be using the image of the Great King, but couched in such a way that they could appeal to not just the Persians, but to the Cilicians and the Greeks in the region as well. From the outset, the *Audience Relief* served as a model and inspiration for the coinages of the western

Achaemenid Empire, as well as a means of establishing the authority to rule for those who utilized it. However, its central subject, the Great King, is supplanted by local divine figures, making the king of Persia only an allusion, instead of the concrete subject of the coins.

The *Audience Relief* in Greece

While it is difficult to trace the direct pathway of the transmission of Persian iconography to Greece, it seems most likely that mainland Greece encountered Achaemenid imagery either directly through the Persians during the Persian Wars or via contact with Ionian Greeks, who had already incorporated aspects of Achaemenid iconography within their visual culture. At some point, most likely after the failed Persian invasions of the 5th c. BCE, Greek artists seemed to perceive the flexibility of the *Audience Relief*, which "allowed it to be sampled and adapted within local hierarchies."[44] Travelling sculptors and diplomatic embassies would have been exposed to the *Audience Relief*, which played a central role in the transmission of Achaemenid motifs and concepts to Greece.[45] This transmission starts before the conquests of Alexander, particularly on Attic pottery of the fifth and fourth century BCE. An Attic red-figure skyphos created c. 450 BCE depicts on one side a Persian seated in a way that possibly suggests a visual echo of the enthroned Great King, while the figure standing on the opposite side bears striking similarities to Achaemenid royal Archer coinage.[46] A definitive example of the modified Audience relief can be seen on an Attic red-figure *lebes gamikos* from the early fourth century BCE, which depicts a bride seated on a Persian-esque chair. Though she does not hold a scepter or lotus, her arm placement is very similar to that of the Great King, while the position of her body resembles Baal of Tarsus on the coins of Datames and Mazaeus.[47] These few examples demonstrate the existence of Persian imperial iconography in Attica, if not mainland Greece as a whole. However, the
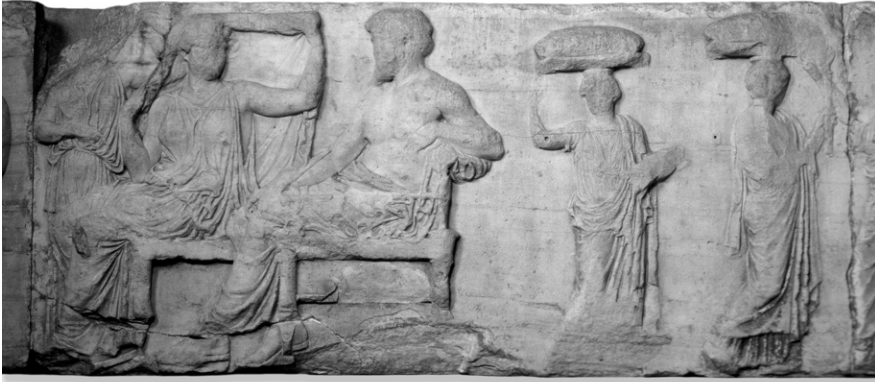
Figure 6. Parthenon Frieze, Block E V. © Trustees of the British Museum.

full adoption of Achaemenid iconography only appears to occur after the campaigns of Alexander the Great. A clear example of this is found in elements of the Parthenon frieze in Athens. We have an example of a Persian royal footstool on the Parthenon, on which a girl is depicted to the right of Zeus carrying a footstool over her outstretched arm. I agree with Thompson, who argues that this was the footstool of Xerxes captured at Plataea. I also concur with Root, who follows Thompson and Boardman, detecting the traces of a lion's paw on the frieze, which would corroborate the stool's identification as a Persian royal footstool.[48] It appears that at some point the knowledge of the Achaemenid king's association with the footstool entered the visual language of fifth century BCE Athens, allowing it to be depicted on the Parthenon as a direct allusion to Persian military defeat. We see this in the distinctly Persian throne Zeus sits upon, as well as the presence of the footstool being held by an attendant. Root argues that the processional scene on the Parthenon was created as a form of imperial art, and, as such, the Athenians would have looked to the iconography of Persepolis and the Great King as a source of inspiration. She suggests that the Parthenon processional frieze "is a message of imperial aspiration articulated through a festival metaphor borrowed deliberately from the Persians and recast in the guise of an eminently Athenian celebration."[49] In contrast, Boardman argues that Root's comparison between the

Apadana and the Parthenon is incorrect, based on the premise that there are no physical similarities between the scenes and that the processional frieze on the Parthenon would have been difficult to view from the ground.[50] It is a mistake to equate the position of the frieze with its importance. After all, the *Audience Relief* at Persepolis was located in a stairway, yet it was clearly reused and adapted by a wide range of individuals across the Persian Empire. It is clear that the iconography of Persepolis had become an active, universal vocabulary for transmitting ideas of regal authority by the fourth century BCE.[51] This connection was further cemented by Alexander the Great's conquest of Persia, creating a definitive path for Persian art and iconography to reach Greece proper.

The Greek Coins

The first adaptation of the *Audience Relief* on Greek coinage occurred under Alexander the Great, who began minting coins similar to those of the Persian satraps after his conquest of Persia. This was most likely intentional, as a way to create a sense of continuity in ruling authority. In *De Alexandri magni fortuna aut virtute*, Plutarch concludes a monologue with 'Alexander' asserting that "it is necessary for me to counterfeit [i.e. render invalid] the current coin and to re-stamp the barbarian world by means of Greek government."[52] Though this statement is a work of fiction,

the sentiment holds true when examining Alexander the Great's minting program. His lifetime staters are widely considered to be a masterclass of iconographic blending, incorporating Greek, Egyptian and Persian imagery and concepts in a form of propaganda that was widely understandable to a variety of audiences. Indeed, propaganda was an important secondary component of these coins, though they are primarily meant to function as currency.[53] The iconography of Alexander's coins was carefully constructed: as Chamoux states, Alexander the Great was aware of the "… value of propaganda of all kinds, not least the value of myth to solidify his hold on the minds of his subjects."[54] If Alexander's goal was to capture the attention of his subjects, he succeeded. The iconography of the Alexander III tetradrachm was easily identifiable, comprehensible, and accessible to his diverse subjects, and its universally popular nature ensured its continued use and influence well into the 3rd c. BCE.[55] This popularity also ensured the adapted transmission of the Great King from the *Audience Relief*.

The obverse of coins struck during Alexander's lifetime depicts a figure who is either Alexander in the guise of Heracles

Figure 7. Reverse of Alexander III tetradrachm, 325–323 BCE. Courtesy of the American Numismatic Society.

or Heracles himself, an identification which remains hotly debated.[56] In either case, Alexander adopted a distinctly Greek practice of placing a deity on the obverse of his coinage. It is on the reverse that we find the distinctly Persian iconography, when Alexander adopts the image of Baal of Tarsus seen on earlier satrapal coinage. It is generally agreed that this figure is Zeus, not Baal, but the close similarity between the two seated figures makes a definitive distinction difficult.[57] This may well have been the point: Alexander adapted the coinage of the conquered Persians and introduced a distinctly Greek obverse type, but his reverse retained an image familiar to the Persians, one that was originally derived from the enthroned Great King from the Apadana. A sense of continuity was essential for Alexander's reign. It is perhaps no coincidence that the coins of Alexander depicting the seated Baal/Zeus were minted primarily in Babylon, the satrap of which was the same Mazaeus who issued the seated Baal of Tarsus staters discussed above.[58] On those satrapal coins, the place of divine authority was given to Baal as an adaptation of the Great King and possibly Ahura Mazda. Alexander takes this image of Baal and converts it into a nearly identical image of Zeus, further continuing the adaptation of the Great King. As the king of the gods and Alexander's ancestor, Zeus was a perfect choice as Alexander's divine protector. Zeus holds a scepter similar to the one Alexander adopted from the Persians, emphasizing Alexander's position as the king of the Persian Empire and reinforcing his divine heritage.[59] However, instead of placing Zeus on his obverse like the earlier examples of this coin image, Alexander places him on the reverse, giving divine primacy to the Heracles/Alexander portrait on the obverse. As a result, the Great King from the *Audience Relief* is removed even further from his position as the supreme authority in the Achaemenid Empire. His adapted image is moved from its position of primacy to the reverse of Alexander's 'Persian' coinage.

Importantly, the basic meaning of the enthroned Great King still maintains a familiar iconographic message of regal power and authority. This is visible in a further adapted image of the Great King on the coinage of one of Alexander's successors, Lysimachus of Thrace. The obverse of this coin clearly depicts Alexander bareheaded with ram's horns, a clear reference to Alexander's supposed father, Zeus Ammon.[60] It is Lysimachus' reverse that provides us with the adapted Great King, just as on the coins of Alexander the Great. Here, instead of Zeus or Baal, we see Athena. Lysimachus' depiction of Athena is similar to that of Baal in position, though not necessarily in attributes: she is seated on a throne, wearing a flowing robe, a Corinthian helmet, and her shield depicting a gorgon head leans against her seat, in a style that originated on these coins in 297/6 BCE.[61] The link between Lysimachus and Athena is not discussed in any known primary sources. Given the physical similarities, Lysimachus' Athena was likely inspired by the Zeus on Alexander's tetradrachm, which he in turn adopted from the Persians. Athena replaces Zeus as Lysimachus' divine protector, and her physical resemblance to Zeus means she also literally takes his place. Zeus and Athena are posed in the same manner, both stretching out their right hand in offering (Zeus holds an eagle, and Athena holds a Nike), and both appear to clutch a scepter. The largest difference in the Lysimachus reverse is that Athena is not seated on a distinctly Persian throne, as prior iterations of the Great King always were. Instead, she appears to be on a Greek-style chair. Lysimachus' use of a distinctly Greek seat seems to divorce himself further from the Persian iconography on which the reverse is based. This makes partial sense when we take into account that Lysimachus was originally king of Thrace after Alexander the Great's death, but less sense when we consider that this coin type was minted after he had taken control of Macedonia and Asia Minor. Perhaps Lysimachus was seeking to solidify his powerbase in Greece while also employing a distinctly Persian

Figure 8. Reverse of Lysimachus tetradrachm, 297–281 BCE. Courtesy of the American Numismatic Society.

reverse on his coins. The detail of Athena holding out a Nike towards the coin's legend bearing Lysimachus' name certainly suggests that she is bestowing victory upon him. Regardless, the similar composition of Lysimachus' Athena and the Zeus of Alexander's tetradrachm strongly suggests that Lysimachus' Athena derives from Alexander's Zeus, which in turn can be traced back, through Baal of Tarsus, to the Great King enthroned in the *Audience Relief* of the Apadana.

The *Audience Relief* in the Interim

By the Hellenistic period, the identity of enthroned Great King from the *Audience Relief* seems to have been almost completely phased out in later iterations. Instead, the *Audience Relief* morphed into a depiction of a seated deity (the selection of which seems entirely up to the issuing authority) holding a staff and most often seated on a Persian throne. It seems likely that by this time the knowledge of the enthroned Great King's place within the larger messaging of the *Audience Relief* was not well known. As demonstrated by the coinage of Lysimachus, the seated deity on a Persian throne moved permanently from the obverse to the reverse of subsequent iterations, a distinct downgrade from the Great King's previous position of

absolute authority. The transmission of the *Audience Relief* becomes even more varied in the interim period between Alexander the Great and its appearance on Roman coinage. Beyond Lysimachus' tetradrachms, we have examples of coins from various successor dynasties that either reproduce the seated Baal figure wholesale, or modify the image entirely to suit their needs.

In Egypt, Ptolemy I Soter, the founder of the Ptolemaic dynasty, minted a tetradrachm very similar in form to that of Alexander the Great's lifetime coinage; the only difference is found on the obverse, where Alexander is pictured wearing an elephant helm, instead of the lion skin associated with Heracles.[62] The seated deity seems to disappear almost entirely from Ptolemaic coinage, until it reappears on a tetradrachm minted in 122-120 BCE by Cleopatra Thea of Egypt and her son Antiochus VIII Grypus of Syria, who were co-rulers of the Seleucid Empire.[63] Before this tetradrachm was minted in 122-120 BCE, the Selucids already had their own version of the *Audience Relief* coin. Antiochus I Soter's tetradrachm version (280- 261 BCE) depicts Apollo sitting on an *omphalos* on its reverse, an image which echoes the *Audience Relief* in form and function, but, like the coins of Lysimachus, has done away with the distinctive Persian throne.[64] The same can be said for the Seleucid ruler Antiochus II Theos, whose tetradrachm depicts Heracles on its reverse seated in a manner similar to the *Audience Relief*. However, Heracles is shown here holding a club in his hand instead of a scepter, and he is seated upon what appears to be a pile of rocks and his identifying lion skin.[65] It is clear that the general motif of the *Audience Relief* continued in the Seleucid Empire, though it appears that most of the time it was sufficient to merely hint at it. The same appears generally true for the Ptolemies, as the seated deity seems to have been phased out altogether after Ptolemy I Soter. However, the tetradrachm minted by Cleopatra Thea and her son Antiochus VII Grypus tells a somewhat different story. This coin depicts mother and son on the obverse

Figure 9. Reverse of Mithradates I drachm, 171–138 BCE. Courtesy of the American Numismatic Society.

in a clear display of equal power, and also resurrects the seated Zeus/Baal iconography from the days of Ptolemy I Soter on the reverse, complete with Persian throne. It is unclear whether Cleopatra Thea and Antiochus VII Grypus knew the origins of the seated Zeus/Baal image that they placed on their reverse. Was it a direct allusion to the *Audience Relief*, or merely a callback to the founder of the Ptolemaic dynasty? In a way, the answer is one and the same, whether the issuers knew it. The continual use and modification of the *Audience Relief* through various empires demonstrates the continued understanding of the power and authority the motif transmitted, even if altered. We also see adaptations of the seated Great King beyond the successor kingdoms, on the coinage of the Parthian Empire . Ongoing discussion exists about the identification of the figure on these coins, so I will limit my contribution to this: the reverse image of the coin depicts some seated male deity, likely Apollo, on a *diphros* (stool) or, in later iterations, on an *omphalos*.[66] The male figure holds a bow, which is thought to be a symbol for the Parthian people. There are

definite visual echoes of the earlier Baal adaptations of the enthroned Great King, though obvious differences exist. Indeed, Parthian scholars seem to be more inclined to attribute the inspiration for these coins to the Seleucids, not the Persians. The similarities between the Parthian Archer and the depiction of Apollo on the coinage of the Seleucid ruler Antiochus I Soter (see above) certainly supports this connection. However, the Seleucid dynasty likely got the seated deity motif from the satrapal coinage of western Anatolia, as part of the numismatic trends that immediately followed Alexander the Great's death.[67] Overall, despite this loss of identity and shifting of the motif from the obverse of Persian coinage to the reverse of Greek currency, some sense of its significance and message of ruling authority must have survived. These interim examples from the Seleucids, Ptolemies, and the Parthian Empire give us a clear line of continuity for the use of the *Audience Relief*'s royal motifs on coinage, implying that the original iconographic design of the *Relief* was never fully lost, though its meaning might have been.

The Roman Coins

Beginning in the late first century BCE, Rome engaged in ongoing conflict with the Parthians, which may have brought it into increasing contact with the remnants of imperial Achaemenid iconography, either through military expeditions or diplomatic embassies.[68] The Romans were also familiar with the adapted *Audience Relief* in a Greek context, as a result of trade, exchange, and war with the various successor kingdoms. One possible explanation for the two earliest iterations of the enthroned Great King on Roman currency may be related to Roman conquest in the region, and adaptation of local motifs to further that message. This does not necessarily change the iconographic meaning, however, as the original *Audience Relief* in the Apadana has been interpreted as a scene of conquest. The earliest Roman iterations of the enthroned Great King appear to be *RRC* 268/1a-b,

minted in 126 BCE. The moneyer N. Fabius Pictor depicted his grandfather Q. Fabius Pictor on the reverse. Pictor is seated wearing armor, holding an apex in his right hand and a spear in his left and is accompanied by a shield. The message of conquest is still apparent, as Q. Fabius Pictor lived through at least part of the Second Punic War, but the coin is more about honoring the deeds of an ancestor than expressing the importance of a divine authority. The next time we see anything similar to this construction is in 47/46 BCE, when Cato the Younger issued a denarius depicting seated Victory, holding a patera in her right hand and her attribute, the palm branch, in her left.[69] Unlike Q. Fabius Pictor's coin, Cato the Younger's use of Victory here shows the connection between the personification of Roma on the obverse of the coin with the personification of Victory herself on the reverse. The coin seems to state you cannot have one without the other.

It is not until Caesar that we see a return to the imagery of a patron deity (in this case Venus) on the reverse offering Victory to the man on the obverse. This is due to the aversion towards placing living Romans on

Figure 10. Reverse of L. Aemilius Buca denarius (issued under Julius Caesar), 44 BCE. Courtesy of the American Numismatic Society.

the obverse of coinage, as the only precedent for it in Republican coinage occurred in 196 BCE when T. Quinctius Flaminius placed himself on the reverse of a Greek stater, much to the dismay of the Senate in Rome.[70] Julius Caesar's later coinages blatantly ignore the precedent of avoiding placing living Romans on coinage; instead, his portrait is an explicit escalation in regnal iconography. Caesar's coinage in 44 BCE marks the forceful return of the Hellenistic association of a ruler on the obverse with a patron god on the reverse. *RRC* 480/7b is the only seated Venus recorded at present among Caesar's coins. Venus is seated facing right, holding a transverse scepter in her left hand and Victory outstretched in her right. This iconographic construction appears directly related to the tetradrachm of Lysimachus of Thrace mentioned above. There is no shield next to this seated Venus, and instead of facing to the left like Athena, she faces right, so that her scepter is in the background instead of the foreground.[71] The most definitively 'Persian' feature of the coin is the distinctive throne, with its clearly recognizable rolls, drooping sepals and lions' feet. Once again, we see a deity seated upon a clearly Persian throne, reaffirming the connection between Caesar's Venus and the Great King of the Apadana. This is not Caesar passively using a Hellenistic iconographic association, but actively and intentionally selecting an image that has a long, clear history of transmitting ideas of kingship, traceable all the way back to the *Audience Relief* in the Apadana, where it is our first extant example of such an audience scene. Caesar's coin type provided subsequent Roman emperors a link to the coinage of Alexander the Great, and through him a link back to the Achaemenid kings, whether conscious or not, as well as a precedent within Roman coinage for this imagery.

Caesar revived the imagery of a patron deity offering blessings that is depicted by Alexander and later Lysimachus, and combined it with his living portrait. While Caesar may not have been actively using this iconography in the same way as a Hellenistic king, he was at least passively associating himself with kingship by alluding to Alexander the Great. Moreover, the emperors who succeeded him certainly were making an active comparison with Hellenistic rule; they placed their own portraits on the obverse, and depicted some deity seated on the reverse, holding any number of items that directly correlate to that emperor's message. Caesar's *RRC* 480/7b issue directly inspired the iconography of hundreds of coin issues minted by thirty-six of the first forty-four Roman emperors and empresses. The impact of this is astounding: with the exception of eight emperors, most of whom had short reigns, there is an almost unbroken line of this reverse type from the *RRC* 480/7b issue in 44 BCE until the empress Severina (wife of Aurelian), sometime between 270-275 CE, a span of 319 years. Several of Caesar's *denarii* reverses revive the image of a deity offering Victory that we first see on the tetradrachms of Lysimachus (in turn inspired by the coinage of Alexander the Great), but it is the seated Venus that most closely ties to Alexander's issues, establishing a Roman precedent that appears to have remained wildly popular for centuries after Caesar's assassination. The iconographic program of the seated Venus reverse in combination with the living portrait obverse is perhaps one of the most visible influences Caesar had on the Roman emperors, though certainly it was not the only one. Caesar's *RRC* 480/7b coin takes direct inspiration from the coinages of Lysimachus and Alexander the Great, and, by extension, the *Audience Relief*. Moving forward in time, Caesar's denarius becomes the model for those who come after, marking a clear chain of transmission between the *Audience Relief* down through the Roman Empire, not only in terms of iconographic depiction, but also in terms of the underlying message of imperial, divinely ordained rights of rulership.

Conclusion

By tracing the various iterations of the

enthroned Great King on the coinage of later rulers and empires, we get the sense of the pervasiveness and persuasiveness of the fundamental aspects of this iconography. What was first depicted on the north stairway of the Apadana at Persepolis as a clear message about the Great King's power over his subject peoples had farther-reaching impact than its sculptors could have predicted. Originally adopted in the form of the Baal of Tarsus staters of the satraps Pharnabazus II, Datames, and Mazaeus, the *Audience Relief* was then transmitted through the coinage of Mazaeus to the iconographic program of Alexander the Great. Through Alexander and his successors, especially Lysimachus, the form of the Great King continued in the image of enthroned Zeus and the seated deity on Parthian coinage. Its final form was reached in the coinage of Julius Caesar, who adopted the iconography of Alexander the Great but put his own spin on the programmatic messaging. Each iteration of the seated deity, from the Great King to Venus, seems to stem from the idea of conquest and subsequent cultural appropriation. Whether the original meaning of the *Audience Relief* was known to Caesar, its longevity makes it clear that it became synonymous with ideas of power and right to rule, features that numerous subsequent rulers adopted as well.

Endnotes:

1 Bellinger 1963; Harrison 1982; Le Rider 2007.
2 In particular, see Root 1979; Miller 1997.
3 Root 1985, 120.
4 Root 1985, 118.
5 For in depth discussion of the dating of the Apadana, see Farkas 1974; Root 1988; Nimchuk 2001.
6 Farkas 1974; Rubin 2008.
7 I hesitate to call the king Darius I, here, as some scholars do, because the image of the Great King seems to have been a more universal, generalized ruler based on the depictions, not a specific individual. The same reasoning applies to my use of the term "Crown Prince" instead of assuming the prince is Xerxes I.
8 Root 1985; Garrison and Root 2001; Nimchuk 2002.
9 Collins 2012, 393–394.
10 Boardman 2000, 142.
11 Boardman 2000, 146.
12 See Farkas 1974; Boardman 2000; Allen 2005 for further discussion of these parallels.
13 Farkas 1974, 56.
14 Allen 2005, 44; cf. Root 2002; Andrianou 2006, 222.
15 Tucker 2014.
16 Root 1985, 113; cf. Rubin 2008, 8; Finn 2011, 222.
17 Root 1985, 113; cf. Rubin 2008, 8; Finn 2011, 222.
18 See n.11.
19 Miller 1997, 127–128.
20 Jamzadeh 1991, 80.
21 Ibid, 76–77.
22 See Jamzadeh (1991) for in-depth discussion of each element of the Achaemenid throne.
23 Jamzadeh 1991, 2-3; Boardman 2000, 43.
24 Miller 1997, 54.
25 In particular, iterations of the Audience Relief appear in several forms of media: on funerary monuments and tombs in Lycia, Caria and Egypt, where private individuals are depicted enthroned like the Great King (Allen 2005, Rubin 2008); on architectural relief sculptures in Cilicia (Miller 1997, 95-96); on seals found in Phrygia and on Fortification sealing 22 (Rubin 2008, 112, Allen 2005, 47); and on similarly composed Persian finger rings (Boardman 2000, 155). For adaptations of the Audience Relief for personal use, see Miller 1997; Rubin 2008. Dusinberre (2003, 10) notes that the cultural impact of the Achaemenids in some areas of the Mediterranean lasted well into the Hellenistic period, which demonstrates that local cultures were actively adopting and incorporating Persian customs into their own, instead of "[…] merely taking on the appearance of foreign traits to curry favor with barbarian despots."
26 Allen 2005, 50; Miller 1997, 245–246; Brosius 2011, 143.
27 Allen 2005, 62.
28 For discussion of the Archer types, see Root 1979; Stronach 1989; Briant 1996; Garrison 2000; Nimchuk 2002; Root 2002; Bodzek 2014. These coins are usually gold, not silver, and present the Great King running on the obverse, holding a scepter and a bow. The reverses usually have a simple punch mark.
29 Nimchuk 2002, 63.

30 Harrison 1982, 209-210.
31 Root 1985.
32 Kyrieleis 1969, 144-6.
33 Miller 1997, 218-219.
34 The legend on Mazaeus' stater, for example, reads BLTRZ (Aramaic BLTRZ =Ba'altars).
35 Harrison 1982, 241.
36 Bodzek 2014, 67.
37 Harrison 1982, 209-210.
38 Bing 1998, 54.
39 See Bing 1998 for discussion of Datames' satrapy.
40 For the difficulties in identification of "Ana," see Bing 1998, 59-62.
41 Bing 1998, 59; cf. Moysey 1986.
42 Bing 1998, 62. For Ahura Mazda's connection with the sun, see Hdt. 1.131 and Plut. Artax. 29.7.
43 Bing 1998, 66-69.
44 Allen 2005, 53.
45 Root 1985, 118.
46 Miller 1997, figs. 24-26.
47 Miller 1997, fig. 75.
48 Thompson 1956, 290; Root 1985, 107, n. 20; Boardman 1977, 41.
49 Root 1985, 113; cf. Miller 1997, 218.
50 For further discussion on the issues of the Parthenon frieze's visibility, see Marconi 2009.
51 Root 1985, 120; cf. Root 1979.
52 Plut. De. Alex.326d (translation is my own): δεῖ κἀμὲ νόμισμα παρακόψαι καὶ παραμαράξαι τὸ βαρβαρικὸν Ἑλληνικῇ πολιτείᾳ. See also Kurke 1999.
53 Taylor (1995, 6-7) defines propaganda as "…the deliberate attempt to persuade people to behave in a desired way…what distinguishes propaganda from all other processes of persuasion is the question of intent."
54 Chamoux 2003, 250.
55 Proffitt 2016.
56 Scholars who argue for the identification of the obverse as Alexander (in the guise of Heracles) include: Bieber 1964, 48-49; Pollitt 1986, 25; cf. Bellinger 1963, 13-21; Stewart 1993, 158-159; Thompson 1982, 119.
57 Le Rider 2007, 11-15.
58 Harrison 1982, 365.
59 For discussion the royal costume Alexander adopted from the Persians, see Collins 2012, 395; Fredricksmeyer 1991, 204.
60 For a discussion of the literary tradition of the visit to Siwah, see Howe 2013.
61 Faita 2001, 172.
62 Ptolemy I Soter, tetradrachm, Alexandria. 17.1 g, 26.5 mm. 317- 311 BCE. Obv.: Head of Alexander wearing elephant scalp. – Rev.: ΑΛΕΞΑΝΔΡΟΥ - Zeus seated on throne with
eagle and scepter. Ref.: American Numismatic Society 1944.100.35702.
63 Cleopatra Thea and Antiochus VIII Grypus, tetradrachm, Antioch on the Orontes. 16.44 g, 29 mm. 122-120 BCE. Obv.: Jugate heads of king and queen r. – Rev.: ΒΑΣΙΛΙΣΣΗΣ ΚΛΕΟΠΑΤΡΑΣ ΘΕΑΣ ΚΑΙ ΒΑΣΙΛΕΩΣ ΑΝΤΙΟΧΟΥ - Zeus seated holding nike. Ref.: American Numismatic Society 1944.100.76787.
64 Antiochus I Soter, tetradrachm, unknown mint. 17.13 g, 28 mm. 280-261 BCE. Obv.: Head of king
r. – Rev.: ΒΑΣΙΛΕΩΣ ΑΝΤΙΟΧΟΥ - Apollo seated on omphalos holding arrow. Ref.: American Numismatic Society 1948.19.2307.
65 Antiochus II Theos, tetradrachm, Cyme. 17.13 g, 31 mm. 261-246 BCE. Obv.: Head of king r. – Rev.: ΒΑΣΙΛΕΩΣ ΑΝΤΙΟΧΟΥ - Herakles seated holding club. Ref.: American Numismatic Society 1967.152.674.
66 Eckhel 1828, 544-546, 549-550 argues that the seated figure was meant to represent the reigning monarch, while Wroth 1964 believes the figure is just a seated Parthian warrior. Seltman 1955, 236 proposed the figure was Apollo, a position supported by Raevskii 1977, 83-85 (though Raevskii's conclusions have been disproven by Meyer 2013, 26-28). Lerner 2017, 14 argues that the deity here is a syncretized god who was a fused form of Mithra and Apollo.
67 For detailed discussion, see in particular Lerner 2017.
68 Rubin 2008, 105.
69 RRC 462/1a. Cato the Younger, denarius, Africa. 3.93 g, unknown diameter. 47/46 BCE. Obv.: ROMA M·CATO·PRO·PR - Female bust (possibly Roma) right, hair tied with band. Border of dots. Rev.: VICTRIX - Victory seated right, holding patera in right hand and palm-branch in left hand, over left shoulder. Border of dots. Ref.: American Numismatic Society 1937.158.268.
70 T. Quinctius Flaminius, stater, Greece. 8.44 g, unknown diameter. 196 BCE. Obv.: Victory standing left, holding wreath in out-stretched hand right and palm-branch in left hand; on left, inscription. – Rev.: Bearded head of T. Quinctius Flamininus r. Ref.: British Museum 1954,1009.1.
71 The reasons for this switch are unknown, but possibly may be related to the flipped image of Venus. We are seeing her from the opposite side as our other depictions of a seated deity, so while her handedness has not changed, the staff is as a result in the background, not the foreground.

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The Colonial City: Eden, Amazonia, and the Humanist Imagination

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This article explores how the humanist imagination of early modern Europe was used to legitimize European colonial endeavors throughout the Americas. It focuses on "humanist-cum-colonial" legislation such as natural slavery, terra nullius, and civilitas to argue that early modern humanism aided colonists in conflating indigenous people with landscapes, in order to exploit both as natural resources. It explores the Pythagorean issue of torrid zones, the mythologies of La Malinche and Pocahontas, and the urban gridiron plan. The article ultimately concludes with a reflection upon archaeology itself, and the discipline's connections to the "humanist-cum-colonial" traditions of the early modern period.

Introduction

Humanism of the early modern period is often discussed through a geographic lens focused on Europe, however, its influence was far and wide, reaching parts of Africa, Asia, and the Americas on the tides of colonization. This article seeks to explore the relationship between humanism and colonization while positing that the two together, referred to as a humanist-cum-colonial tradition, forever altered the early modern world. In particular, the classically inspired notions of torrid zones, *natural slavery*, *terra nullius,* and *civilitas* produced a paradox of the real and imagined, of Eden and Amazonia, within the Americas and other colonized spaces. It is from this humanistic imagined and paradoxical earth that a hetero-patriarchal rule was born, conflating the bodies of indigenous and enslaved people with natural resources, and birthing colonial cities.

Early Modern Humanism

While debates abound regarding the dangers of linear time and periodization, the beginning of the early modern period in Europe is generally affixed to the mid or late fifteenth century.[1] This period of time is characterized by massive social, political, and economic upheaval, resulting in the popularization of humanism throughout the continent. Early modern humanism began in fourteenth century Italy before spreading throughout Europe during the fifteenth and sixteenth centuries. Its founding tenets promoted civic duty, an individual desire for knowledge, and an education firmly rooted in the liberal arts or the study of classical grammar (*grammatica*), rhetoric (*rhetorica*), history (*historica*), and poetry and moral philosophy (*poetica ac moralis*).[2] The early modern humanist, Giovanni Pico della Mirandola, illustrates the importance of a classically rooted education in his never performed 1486 speech, *Oration on the Dignity of Man,* stating:

the dignity of the liberal arts…and their value to us is attested not only by the Mosaic and Christian mysteries but also by the theologies of the most ancient times. What else is to be understood by the stages through which the initiates must pass in the mysteries of the Greeks? These initiates, after being purified by the arts… were granted admission to the mysteries…[3]

A classical education, according to Pico, therefore yields divine Christian knowledge and brings one closer to God. This notion of divinity through classical education is essential to humanism and is found throughout early modern humanist literature such as Leon Battista Alberti's, *On the Art of Building* (1485), Niccolò Machiavelli's *The Prince* (1513), and Thomas More's *Utopia* (1516). Humanists subsequently came to believe that a liberal arts education was the key to "civilization," and this linear evolution ultimately influenced a range of subjects such as the arts, religion, philosophy, politics, and science.[4]

As humanism spread throughout Europe it challenged and upended medieval Judeo-Christian geographic conceptions of the world.[5] The sixth century B.C.E. Greek philosopher Pythagoras and his claim that the earth was divided into five climatic zones (two temperate, two frigid, and one torrid) was revitalized by early modern humanists and applied by European explorers to previously uncontacted regions of the globe.[6] Through a Pythagorean-influenced humanist view of the world, Europe was regarded as a temperate zone while parts of Africa, Asia, and the Americas were considered torrid zones or, unimaginably hot regions of the world burnt by the sun, and thus uninhabitable.[7] Furthermore, as European explorers traveled these torrid zones, they became colonial agents of early modern European states, investigating, extracting, and exploiting the environments and people of foreign lands for economic, social, and political gain.[8] Colonists within the Americas specifically, were met with

geographies, worlds, and people that simultaneously lived within (as torrid zones) and without (as previously inconceivable places) their early modern worldview. Humanist understandings of theology and philosophy created a confusing colonial paradox that understood the encountered lands and spaces of the Americas as being simultaneously nowhere and inhabited by no one, *and* somewhere and inhabited by someone.[9]

According to this perspective, the Americas, and parts of Africa and Asia, should have been geographies of flames where nothing could grow, live, or survive; instead, however, colonists were met with living, healthy people, diverse empires, and landscapes of "…wheat, meat, fowl, gold, and gems…" they often described as Edenic.[10] This paradox of habitable/uninhabitable lands, and imagined/unimagined people ultimately led European colonizers to further rely upon humanist interpretations of classical and biblical literature, law, and mythology. Consequently, the humanist-cum-colonial imagination that encountered colonized and soon-to-be colonized lands, perceived torrid zones through racial lenses that transformed foreign people into the Other, and posited itself as the discoverer, dreamer, and creator of "new" worlds.

Lands and Bodies

The humanist reinterpretation of Pythagoras's torrid zone theory adopted by European colonizers incarcerated the indigenous people of Asia, Africa, and the Americas within a cabinet of curiosity that labeled them as either gullible and innocent children of Eden or ferocious and beastly demons of Amazonia. In his 1552 published condemnation of physical colonial violence, *The Devastation of the Indies: A Brief Account,* Fray Bartolomé de las Casas, the 16th century Dominican friar, refers to the indigenous people of the Americas as:

the most guileless, the most devoid of wickedness and duplicity, the most obedient to their native masters

and to the Spanish Christians whom they serve. They are by nature the most humble, patient, and peaceable, holding no grudges, free from embroilments, neither excitable nor quarrelsome…[they] are the most devoid of rancors, hatreds, or desire for vengeance of any people in the world.[11]

Thus, according to de las Casas, the indigenous people of the Americas are innocent children, to be nurtured by the paternal Catholic Church, and protected from the sins of colonial greed and physical violence; they are Eden's Adam and Eve before The Fall.

Alternatively, in his 1547 treatise, *Democrates Secundus: Of the Just Causes of War against Indian*s, Juan Ginés de Sepúlveda, a 16th century Spanish humanist, refers to the indigenous people of the Americas as people who abide by, "barbarous institutions and customs," and:

are devoted to all kinds of intemperate acts and abominable lewdness, including the eating of human flesh… [and] that prior to the arrival of the Christians…they made war against one another continually and fiercely, with such fury that victory was of no meaning if they did not satiate their monstrous hunger with the flesh of their enemies…[12]

De Sepúlveda's depiction of indigenous people disputes the innocence of de las Casas's "children" and instead describes them as bloodthirsty cannibals akin more to ferocious animals than human beings; they are monsters of Amazonia, intent on bloodshed and violence.

Both authors imprison the indigenous people of the Americas into fixed behavioral categories, thus completely dehumanizing them by denying or masking their agency in their narratives. It is de Sepúlveda however, who subsequently advocates for the enslavement of indigenous people because they do not possess "… science

nor even an alphabet, nor do they preserve any monuments of their history except for some obscure and vague reminiscences depicted in certain paintings, nor do they have written laws...."[13] He supports his argument with the Aristotelian notion of *natural slavery* claiming, that because of their seemingly natural or uncivilized existence, it is the very nature of indigenous Americans to be enslaved.[14] Indigenous life essentially becomes indigenous land, a thing to be naturally exploited and used. Natural slavery soon gave way to the early modern paternalistic dogma of *civil slavery* which legalized the purchase, sale, and trade of people of African descent because of their relation to the biblical figure Ham and seemingly uncivilized societies.[15] European colonists, therefore, relied upon notions of natural and civil slavery in order to conflate the bodies of the enslaved with soon-to-be or already colonized lands and to justify their simultaneous exploitation of people and nature.

While Aristotle provided humanist-cum-colonists with ample resources regarding the enslavement of the Other, to/for the citizens of Pythagoras's torrid zone, the Roman legal concept of *res nullius* further strengthened European claims to foreign lands. The ancient legal principle, which roughly translates to "things belonging to no one," as summarized by Gaius, the second century C.E. Roman jurist, implies that unowned "things," being anything from manmade objects to animals, can be seized and through seizure made private property.[16] Additionally, another classical method of legal seizure, known as *terra nullius* or "lands belonging to no one," in the early modern period, was applied to American landscapes that were, from a humanist perspective, unowned, unused, and uncultivated by indigenous inhabitants.[17] Furthermore, the enactment of *terra nullius* throughout the colonized or soon-to-be colonized Americas was accompanied by an early modern system of hetero-patriarchal rule that most often envisioned men as owners and managers of land, thus legally subjecting women to

passive, "natural" roles of housekeeping, pregnancy, and childrearing.[18] As European colonists seized and cultivated indigenous American and African people and land, it was their right to plant, or impregnate, what now seemingly belonged to them. Therefore, the seizure of "unused" indigenous land, a tradition still wholeheartedly embraced by the United States,[19] transformed the body of the enslaved, viewed through a humanist lens of natural and civil slavery*,* into a natural resource for the colonial master to commodify, extract, and exploit; the body became the land. Nowhere is this personification of *terra nullius*, alongside the humanist Eden vs. Amazonia paradox, more evident than in the narratives and stories surrounding two of the early modern world's most famous indigenous women, La Malinche and Pocahontas.

La Malinche and Pocahontas

Known by many names throughout history such as Malinalli or Marina, La Malinche was an indigenous American woman integral to Spain's early modern conquest of what is today Mexico. While she left no identifiable records, a majority of what we do know about her comes from 16th century records written by men, such as Spanish conquistadors Hernán Cortés and Bernal Díaz del Castillo. She was most likely born sometime around 1500 in a Nahuatl-speaking village of southeastern Mexico, where she was enslaved and eventually moved to the southern Mayan-speaking region of Tabasco. While in Tabasco she learned Mayan, was then sold to Hernán Cortés, learned Spanish, before being baptized a Catholic, assuming the title and name Doña Marina.[20] Throughout Cortés' conquest of Mexico she was his translator or, as he often described her, his *la lengua* or tongue, even supposedly uncovering and informing the Spaniards of a planned Aztec surprise attack, seemingly committing herself to the success of Spain's conquest.[21] Around 1523 she gave birth to her son, Martin, fathered by Cortés who, within that same year, gave her as a gift and wife

to Spanish colonizer Juan Jaramillo. She is absent from the historical record until her death about six years later around 1529.[22]

Within Mexican history and mythology, La Malinche has historically been characterized as the mother of Mexico's mixed-race population (*la madre de la cultura mestiza),* a traitor, and a whore.[23] She is often conflated with the murderous and ghostly mother figure of La Llorona and serves as a moral foil to the chaste Virgin of Guadeloupe (*La Virgen de Guadalupe).*[24] Her legacy, therefore, remains trapped within de Sepúlveda's 16th century humanist-cum-colonial argument of indigenous barbarity and lustful violence. Her name has entered the public lexicon as *malinchista* or traitor, and she is even associated with the derogatory term *la chingada,* which loosely translates to "fuck" in English.[25] The explicitly violent overtones of this association, alongside her enslavement and child by Cortés, further ties her body to humanist notions of *terra nullius*. As the Spanish destroyed, transformed, and planted their colonies throughout indigenous American lands, they destroyed, transformed, and impregnated La Malinche's indigenous body. Her Catholic baptism, adoption of the Spanish language, and the birth of her son mirror the destruction of indigenous identity, lands, and culture at the hands of early modern Spanish colonizers. The story of her body is written in the land; her flesh, a natural resource.

If the humanist narratives of the early modern period depicted La Malinche as the whore of colonization, Pocahontas, in turn, s represented as the virgin of empire. Known by many names throughout the historical record such as Amonute and Rebecca, Pocahontas was an indigenous woman integral to Britain's early modern conquest of what is today the United States. While she left no identifiable records, a majority of what we do know about her comes from 17th century records written by men, such as colonizers John Smith and John Rolfe. Born nearly one hundred years after La Malinche in the last decade of the

16th century, Pocahontas was a member of the Algonquian Powhatan Confederacy.[26] In 1607 she met John Smith, an English colonist tasked with establishing the British settlement of Jamestown and its colony of Virginia. Six years later she was kidnapped and held prisoner in Jamestown where she was subsequently baptized a Christian and assumed the English name, Rebecca.[27] In 1614 she married colonizer John Rolfe, giving birth to her son, Thomas, a year later, and then traveling to Britain as a diplomatic representative in 1616, dying the following year in Gravesend, Kent where her remains lie today.[28]

Within United States' history and mythology, Pocahontas has traditionally been characterized as an innocent and noble "Indian Princess" who benignly aids the supposed peaceful British in their colonization of North America. She serves as an Edenic emblem of the United States' seemingly abundant resources and land, and is often reified as a chaste, passive, and prepubescent symbol of colonization's "civilizing" powers.[29] Whereas La Malinche is akin to de Sepúlveda's cannibals, Pocahontas's constructed narrative is in line with de las Casas's children. A letter from her husband John Rolfe to Sir Thomas Dale dated 1614, draws humanist comparisons between her and the biblical wives of the Israelites, hinting at the "dangers" of miscegenation if Rolfe were to marry her before her Christian baptism.[30] Furthermore, a letter from John Smith to the British Queen Anne of Denmark dated 1616, notes Pocahontas's role in the colonization of Virginia as "…she next under God, was still the instrument to preserve this colony from death, famine and utter confusion…"[31] These humanist-cum-colonial characterizations of Pocahontas coincide with the notion of *terra nullius*, albeit in a different format than La Malinche's narrative.

Whereas La Malinche's identity, body, and land are violently ravaged and cultivated by colonization, Pocahontas's identity, body, and land are peacefully refined and civilized through colonization. Her body, like

Virginia, is transformed from a supposedly torrid zone into a temperate one through European intervention. Her body bears no stains of violence like La Malinche's, but instead flourishes with children, trees, and new plantations. Through an early modern humanist-cum-colonial perspective, both indigenous women, their people, and lands were unused; their bodies, according to the dogma of natural slavery, uncultivated; and their torrid zone lifestyles, barbaric, thus inviting the European legal ideology of *terra nullius*. Both classifications of innocence and guilt, naiveite and violence imagine soon-to-be colonized lands and people as *things*: Virginia-via-Pocahontas yearns for and openly accepts civilization, while Mexico-via-La Malinche must be tamed and suppressed beneath it. This colonial conflation of indigenous body and resource, rooted in humanist liberal arts, subsequently gives birth to the colonial city.

The Colonial City

Through the humanist inspired doctrines of *terra nullius,* natural slavery*,* and civil slavery*,* early modern colonists perceived the fertilization of soon-to-be colonized lands with the insemination of soon-to-be colonized women. Colonies, therefore, required cities of fertile, free, indentured, and enslaved men and women, alongside fields and farms of fertile land to sow, reap, and grow economic profits, and future generations.[32] It would take many decades after 1492 for early modern European empires to codify building laws, but the planned gridiron city eventually proved to be a popular choice for transforming indigenous environments into colonial lands.[33] These cities, inspired perhaps by popular humanist treatises on architecture, Alberti's *On the Art of Building* (1485) for example, or derived from indigenous American architectural forms, like the Incan cities of Ollantaytambo and Chucuito, or the Aztec capital of Technochtitlan, with their wide streets, ever-expanding squares–location willing–and ordered boundaries, allowed the surveillance and population

control that early modern European empires desired for their colonies.[34]

As colonial territories grew over time, colonists understood that a flourishing colonial city required special attention to the health and safety of its residents. The gridiron's mathematically planned wide streets, rationally based navigable and replicable thoroughfares, and focal meeting points were deemed essential to a humanist-inspired healthy and ever-expanding commercial and civic center.[35] Its ordered form was also believed to help in the regulation of filth, crime, and natural disasters.[36] Additionally, the early modern colonial city became an ideological space of humanist-cum-colonial law and order, through a revitalization of the ancient Roman concepts of *civilitas* and *rusticitas*. These concepts positioned the Roman city as mediator between the civilized and barbarian, or the early modern city between colonist and indigenous.[37] In this sense, the gridiron imposes law and order, both in its procedural decrees and material form, upon foreign, *rusticitas*, and recently transformed landscapes, *civilitas*. Its orthography combats the unknowns of the outside world, abolishing natural curves, shadows, and crags with structured sightlines that allow the viewer to gaze, or give the illusion of gazing, panoptically upon the colony.

The panoptic city that imaginatively arises from the colonial urban gridiron subsequently transforms the colonial magistrate, police, and governor into an illusionary "solar eye" that looks down upon the city like a god.[38] Its design is simultaneously easy to replicate upon the "unimaginable" environments of soon-to-be colonized lands, and within the maps, documents, and briefs of colonial records. It is the colonial gridiron that physically categorizes indigenous land, and therefore bodies, into literal squares and boxes that are bound and branded by European place names and classically inspired architecture. Finally, it is the establishment of the colonial city via the humanist-cum-colonial traditions of torrid zones, *terra nullius,*

natural slavery*,* and *civilitas* that sees the excavating archaeologist extract, exploit, and engage with indigenous, enslaved, and colonized land, bodies, and life.

Conclusion

Archaeology is a discipline founded on rational principles, inspired by early modern humanism and, especially within the Western Hemisphere, practiced on colonized lands.[39] As archaeologists our research is dependent upon the natural world; from excavation to conservation, lab analysis to museum curation, we work with soil, seawater, and saliva on a daily basis. While many scholars throughout the decades have questioned our methods, interpretations, and theories, it is of utmost importance now to re-evaluate and continue questioning our coloniality.[40] The bodies of indigenous and enslaved American and African people, conflated with the colonized lands of the early modern period through humanist-cum-colonial traditions, still exist in the fabric of our cities, psyche, and soil. What does it mean for humanist trained archaeologists to excavate in what were previously considered to be torrid zones? What Pico-like "miracles" do we encounter and possibly inflict upon those still trapped within a "natural" cabinet of curiosity? And how does a field rooted in colonialism begin reparations?

The early modern humanist-cum-colonial tradition is dependent upon classical texts and colonially transformed goods that are intricately tied together through violence. The Aristotelian passages used to argue for natural slavery bear the blood of ethnic genocide, just as the colonially planned cities of New York City and San Juan exhibit humanist architectural virtues. Likewise, the humanism that informed early modern European architecture, also informed massacres, just as the colonialism that informed early modern hetero-patriarchy informed Virgilian agricultural practice. The web spun by the humanist-cum-colonial tradition is large and complex.

The power of the humanist imagination, the colonial city, and its paradox of Eden and Amazonia is in its portrayal of what is natural and *rusticitas, civilitas,* and torrid. As scholars who engage with anthropologically informed theory, which is also colonial, we have an ability to see past this paradox. We will never truly dismantle the humanist-cum-colonial traditions that support us, however, until we deconstruct them and extract ourselves from their tangled social, political, and economic systems; systems, it should be noted, that we have helped create. Imagination is a powerful thing, and it is that which we must depend upon as we move through time, and hopefully towards an era of anti-colonization.

Endnotes:

1 Cooper 2013; Loomba 2014; Moxey 2013, 23–36.
2 Kristeller 1978, 589.
3 Pico della Mirandola 1956, 25.
4 Kristeller 1978, 586.
5 For notes on the medieval Judeo-Christian world, please see Obrist 2015; regarding Early Modern European contact with Africa, see Lowe 2007; Tymowski 2014.
6 Sanderson 1999, 669.
7 Wynter 1995, 22; for the Medieval torrid and temperate zones' celestial and geographic relationship to paradise, please see Obrist 2015, 55–57.
8 Featherstone 2006; Stoler, 2002.
9 McKittrick 2013, 6.
10 *Histoire naturelle des Indes* (1996, 265); For other instances of Early Mmodern Edens throughout the Atlantic, please see Householder 2007; Berns 2014; Scott 2010; Cyzewski 2014.
11 de las Casas 1992, 28.
12 Mintz and McNeil 2018b.
13 Mintz and McNeil 2018b.
14 Parise 2008, 117–134.
15 Wynter 1995, 34–37.
16 Benton and Strauman 2010, 14–15.
17 Benton and Strauman 2010, 5–11.
18 Moore 2016, 545.
19 Marizco 2020, *NPR*.
20 Godayol 2012, 62–65.
21 Cortés 1971, 73.
22 Downs 2008, 397–400.
23 Over the past thirty years, however, queer and feminist Chicana scholars have fought to reclaim her narrative and add further dimension to her history; please see Godayol 2012, 68–70.
24 For a comparison to La Llorona please see, Simerka 2000; for a comparison to the Virgin of Guadeloupe see, Petty 2000.
25 Kessler 2005, 80–84.
26 Hantman 1990, 676–677.
27 Downs 2008, 399.
28 Paul 2014, 90–91.
29 Downs 2008, 405–406.
30 Rolfe 1907, 241.
31 Mintz and McNeil 2018a.
32 Casid 2005, xvii.
33 For Spanish building laws please see Low (1993); for British legislation Wilson 2016.
34 For information regarding Alberti's *De re aedificatoria* please see Jäger (2004); for broad historiographical explorations of the gridiron in Spain and Latin America please see Gasparini 1993, Low 1993, and Rose-Redwood 2008.
35 Wilson 2016, 101–102.
36 Dawdy 2008, 68–74.
37 Kagan 2000, 26–28.
38 de Certeau 1984, 92.
39 For archaeology's humanist principles please refer to Karmon 2011; Rowe 1965; Roberts 2015.
40 Please specifically refer to Atalay 2006; Battle-Baptiste 2011; Dawdy 2010; Silliman 2010; Tuck and Yang 2012.

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Spears and Speculation: Deconstructing Gender Assumptions in Etruscan Tombs

Jennifer Weigel

The Etruscans have been an object of study and fascination since their tombs were first discovered during the Renaissance. However, this long history of study has often been a detriment to understanding their civilization and one of the areas that has suffered the most is the analysis of Etruscan gender. Gender in Etruscan society has been viewed by scholars through the lens of heteronormative, monolithic binaries, with men the actors in society and women the passive recipients. This view of Etruscan society is especially evident in the discussion of burial assemblages, where the gender of the tomb occupant is presumed based on interpretations of the burial goods rooted in antiquated ideals of masculinity and femininity. In this paper, I reassess interpretations of three tombs by viewing them through the lenses of gender theory and queer theory. All three tombs contain one item that has generally been considered to be male, thus confusing the identification and interpretation of the tomb occupants: spear tips. By applying gender theory and queer theory to these three tombs, I reinterpret the spear tips not as symbols of masculinity, but rather as symbols of power and aristocracy.

Introduction

Etruscology has frequently been inhibited by the paucity of scientifically recorded burial assemblages and contextual information. Unfortunately, many important Etruscan objects were acquired through either looting or now-illegal means, or were not properly documented upon excavation. This, naturally, has led to scholars viewing certain artifacts as isolated *objets d'art* because there is no known provenance. This practice of analyzing artifacts in a vacuum has had lasting effects in the study of the Etruscans, resulting in the field being slow to contextualize objects by studying them with their burial assemblages. When provenance and contextual information are recorded, scholars still tend to view the artifacts in isolation, leading to misinterpretations of certain artifacts and facets of Etruscan society and culture based on eighteenth century ideals, including the study of Etruscan gender and gendered objects.

Etruscan gender is often viewed through the lens of heteronormative binaries rooted in antiquated ideas of gender roles resulting in grave goods being framed as either masculine or feminine objects. Previous studies by Bridget Sandhoff and Larissa Bonfante pushed back against this narrative by exploring the existence of androgyny in Etruscan art and artifacts.[1] While these studies made headway in deconstructing inflexible binaries, they still defined objects as inherently masculine or feminine. Using the lenses of gender and queer theories, this paper reassesses and reinterprets three Etruscan burials with spear tips, an artifact that is usually designated as masculine and is used to gender entire assemblages. This paper first establishes a theoretical framework based on gender and queer theories before providing a brief review of the study of Etruscan gender. The final discussion applies the framework to three Etruscan burials with spear tips, revealing that the spear tips in these burials were used as symbols of power rather than as gender markers.

Theoretical Framework

The basis of the framework for this paper lies in Judith Butler's notion that gender and sex are both socially constructed.[2] Butler states that the formation of sex identifications in a culture is the product of that culture's gender constructions.[3] Thus, individuals only become sexed in conformity with recognizable gender standards.[4] She adds that gender and sex are a stylized repetition of acts and are how people exhibit themselves in actions and bodily decorations.[5] Moreover, Butler argues that gender is a set of acts that produces the appearance of substance, with the "actors" coming to believe the performance is the essence of the gender itself.[6]

Butler's work is part of a broader set of ideas belonging to queer theory, which has greatly influenced the theoretical framework of this paper. One of the contributions of queer theory to archaeology is its recognition of stigmatized sexual identities as entry points for the production of knowledge of the self.[7] The nature of queer theory is to question categories and methodologies that are "naturalized."[8] Additionally, it holds that what is "normative" is constructed in relation to what is "deviant," and therefore it is the "deviance" that is foundational and not the "normative."[9] One of its applications is to examine identity formation, as it necessitates an understanding of "social positionality," the composite of multiple identities that make up one individual.[10] Queer theory in archaeology can be used to emphasize material culture concerning representation, embodiment, and performativity, stressing that an individual's identity is in a constant process of construction, negotiation, and deconstruction.[11]

Related to queer theory are theories of embodiment, which analyze and reconstruct a person's lived experience by examining traces of body practice, idealized representations, and the effects of habitual gestures, postures, as well as other practices that affect the physical body.[12]

To reconstruct a person's lived experience, it is necessary to examine traces of body practice, idealized representations, and the effects of habitual gestures, postures, and other practices that affect the physical body. Embodiment is not just a singular event, but a process that occurs throughout one's life and leaves traces in the skeletal body through interactions between biological and contextual factors.[13] These theories are especially relevant when interpreting assessments of biological sex in skeletons, as is stated by Joanna R. Sofaer: "people do not see each other as genes but as bodies in the world."[14] This quote implies that people do not perceive a person's biological sex, they instead see their embodied gender. Therefore, while a skeleton may be biologically male, female, or intersex, the deceased did not necessarily embody their lived experience in characteristics of their biological sex.

Additionally, it is essential to recognize that mortuary rituals reinforce ideal social structures.[15] Thus, what is intentionally projected in funeral assemblages are the ideals of a society, and conversely, non "normative" structures or behaviors are not well represented. Funeral assemblages often show how a society wants the deceased to be represented and remembered, not necessarily how the deceased represented themselves.[16] Similarly, clothing and other adornments are seen as integral to maintaining ideal social structures and social identities, especially in a mortuary setting.[17]

In this paper, queer theory and its ability to deconstruct "naturalized" societal arrangements are applied to Etruscan gender and burial assemblages to dismantle preconceived notions held about gender that are based on heteronormative interpretations. The evidence is further viewed through theories of embodiment and the idea that funeral assemblages are idealized representations of the deceased and their society's values and beliefs about them. With the theoretical framework outlined, it is necessary to briefly review a few studies investigating Etruscan gender before applying the theoretical framework to the evidence.

Studies of Etruscan Gender

The gender norms of the Etruscans have been fascinating scholars since antiquity. It is known that women enjoyed relatively equal status in marriage and society, ideas supported by the iconography on sarcophagi and tomb paintings. This is also reinforced by the Etruscan practice of recording their matronymic in addition to their patronymic in funerary inscriptions.[18] Etruscan women could inherit property and businesses, could hold positions of power and authority, such as queen or matriarch of her family, and maintained legal autonomy that continued after marriage.[19] Combined, this evidence reveals that Etruscan women were not simply defined by their gender or domestic roles.

While the study of Etruscan gender has focused mainly on women, recent scholarship has included studies of androgyny in art, such as with the famous Capestrano Warrior, which, while not technically Etruscan, was heavily influenced by Etruscan art.[20] Larissa Bonfante most recently discussed the androgyny of the Capestrano Warrior, noting that the combination of the weapons and the articulation of the pelvis complicated its sex and gender identification.[21] Whether the Capestrano Warrior is male or female has not been conclusively determined, but this proves Bonfante's point: that androgyny exists in Etruscan iconography.[22] In addition to the Capestrano Warrior, Bridget Sandhoff has investigated the depictions of Lasa, an Etruscan winged deity, who appears on Praenestine cistae, in a variety of contexts and can be portrayed as different sexes and genders, an example of which is seen in Figure 1.[23] Like the Capestrano Warrior, Praenestine cistae are not technically Etruscan, as Praeneste was in Latium, but the iconography on these objects points to the probability that they were made for

Etruscans living in Praeneste or brought with the owners from Etruria to Latium.[24] These two examples, and others not listed here, demonstrate that the Etruscans displayed gender ambivalence in their iconography revealing that their concept of gender, at least as is represented in their art, was more multifaceted than a strict binary system.

Grave goods and artifacts have been the main avenue of investigation into Etruscan gender. A study conducted at Pontecagnano declared that typical male items include weapons (swords, sheaths, javelin heads, and spearheads), serpentine *fibulae*, razors, and knives; while female items are spinning equipment, arch *fibulae*, interlocking rings, coiled springs, pins, beads, pendants, and bronze studs.[25] It is generally agreed that Etruscan men also wore jewelry as a marker of wealth,[26] but the presence of jewelry within a tomb usually genders the deceased as a woman. Similarly, when items traditionally assumed to be masculine are present, the deceased is automatically gendered as a man, even if there are also items present that

can be gendered as feminine. Additionally, these established identifications of gendered objects do not acknowledge that biological sex differs from gender expression.

The identification of gender in Etruscan funerary contexts has been further complicated by studies of Etruscan symbols of power, which have made headway in deconstructing traditional gender assignments of grave goods. As Gilda Bartolini and Federica Pitzalis note, the eminence of some women is evidenced by the presence of burial items that emanate ideologies of power and royalty, including shields, thrones, chariots, or scepters.[27] The deposition of weaponry, such as helmets, axes, and swords in Etruscan tombs seems to negate the functionality of these items; they no longer represent a warrior's worth but are instead signs of rank and of the continuity of the family group.[28] Thus, weaponry can be symbolic of power rather than inherently indicative of warriorhood or masculinity.

Modern investigations of Etruscan sex and gender usually involve studies of burial

Figure 1: Praenestine cista handle depicting two Lasas of different sexes. Sandhoff 2009, 101 (Museo Nazionale Etrusco di Villa Giulia, Rome, inv. no. 13135).

assemblages through grave goods, although osteological analysis is now being used more often. Investigations into iconography have revealed the presence of androgyny and gender ambiguity in art, but they are not often applied to Etruscan gender construction and most scholars still refer only to normative gender categories that do not include non-binary gender expression. Thus, the study of Etruscan gender has traditionally relied on antiquated views of gender roles, frequently disregarding evidence that contradicts these long-held assignations. With this in mind, the next section will investigate three tombs that each contain spear tips, an item almost always perceived as masculine.

Examination of the Data

The Vignanello necropolis, which is just a few miles southeast of the modern city of Viterbo in central Italy, lies on a hill on the grounds of the Ruspoli estate.[29] In 1916, Bartolomeo Nogara excavated three tombs in this necropolis and identified several other structures. Of particular interest for this paper is Tomb III, dating to the fourth to third century BCE, and its accompanying grave goods.

Tomb III is oriented from east to west, which Nogara notes is unusual, and opens onto the vault of Tomb II .[30] The dromos is 6 m long,

at the end of which was a parallelepiped tufa block that covered the entrance into the tomb chamber.[31] When they opened the latter, Nogara and his team found three steps carved out of tufa attached to the entrance wall that led into a single-chambered tomb measuring 4.35 m deep and constructed with "simple" vaulting.[32] Pressed against the wall to the right of the entrance was a funeral bench made out of tufa, measuring roughly 1.5 x 1.5 m and cut at an oblique angle at the front. On the bench sat the remains of two skeletons.[33] The tomb contained a series of niches cut into the tufa. There were six in the wall to the right of the entrance, another under the funeral bench, nine on the back wall, seven on the wall to the left of the entrance, and seven on the entrance wall.[34] These niches contained hundreds of grave goods; for the sake of brevity, only a small number of the ones which are most representative of the larger assemblage will be described.

On the right wall, the second niche from the top contained a semi-intact round shield decorated with copper foil, a central boss, and concentric zones of decoration of vertical dashes (or rosettes) radiating outward from the center.[35] The inside of the shield contained traces of wood in a wicker pattern.[36] Due to its copper foil and ornate decoration, Nogara posits that it was purely

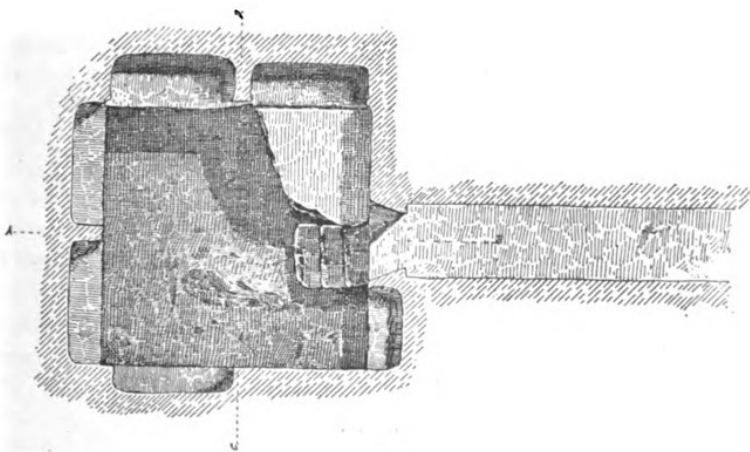Figure 2: Plan of Tomb III, Vignanello Necropolis. Nogara 1916, 63.

decorative and intended for deposition in the tomb rather than use in battle.[37] Another item found in a niche in the wall to the right of the funeral bench is a tile inscribed with the word *Velmineo*, which Nogara identifies as the family name of the tomb owners and as having a Faliscan origin.[38] The niches also contained numerous vessels in bronze, silver, and clay, bronze statuettes, rings and earrings of various metals, and many other items.

Apart from the two skeletons, the funeral bench itself contained many "grouped" grave goods.[39] It is unclear exactly how these items were "grouped" or where exactly they were placed in relation to the skeletons; all Nogara notes is that they were found together on the funeral bench. These items were: six bronze mirrors, two small lebetes of copper foil, two olpai of copper foil, two intact bronze strigils and a fragment of a third, a cup with an umbilicus, two bronze candelabra, two bronze ladles, a terracotta strigil, an alabastron, five terracotta plates, nine black terracotta cups, a clay lamp, a fragment of an iron sword (310 mm long), an iron spear tip, and two other iron spears.[40] Based on his findings, Nogara concludes that the funeral bench held a married couple surrounded by both feminine and masculine grave goods.[41]

Nogara mostly lists the grave's goods, providing few interpretations except to identify the jewelry as belonging to a woman and the weapons as belonging to a man despite a lack of osteoarchaeological analysis.[42] This type of double burial, Bettina Arnold states, often leads to stereotypical identification of a husband and wife, where the male skeleton represents the primary internment and the female is often relegated to an accompanying object.[43] Nogara has done exactly as Arnold describes by inferring the deceased's gender from the grave goods. Since this excavation was undertaken in the 1910s, it is not surprising that there was no bone analysis or alternative interpretation of the grave goods and that Nogara frequently conflated sex

and gender. Without the skeletal evidence, neither individuals' biological sex can be retroactively determined by scholars, but this lack does allow for analysis of the multiple ways individuals and objects might intersect to reflect Etruscan gender identity without the perceived certainty that comes with the presence of sexed skeletons. Nogara assumed that the weapons belonged to a man and the jewelry and other adornment items to a woman. As stated above, jewelry could be worn by all genders in Etruscan society as it was a sign of wealth,[44] so even if one of the skeletons was a woman the jewelry may not have belonged to her. It is just as possible that both could be men, both could be women, or one or both could be non-binary or genderfluid.

What can be determined from the evidence is that the two skeletons were placed next to each other on the funeral bench. Although it is not exactly clear from his description, Nogara gives the impression that the grave goods were piled on top of, or between, the two bodies. If certain items were clearly associated with a specific skeleton, Nogara most likely would have indicated it. Additionally, Nogara states that the tomb was intact and undisturbed from antiquity, without any overt signs that it had been opened since its construction.[45] The spear tip and two spears, along with the other grave goods, were possibly intended for both skeletons. Because spears are often gendered as masculine items and are frequently interpreted as indicative of a male warrior burial, Nogara assumed the spear tips were associated with a male warrior. Throughout his article, however, Nogara specifically states that the weaponry, such as the shield, seems to be for decorative purposes and was not meant to be used as actual weaponry. Although this was posited in 1916, current scholarship confirms that weaponry in aristocratic Etruscan tombs was often meant to convey ideologies of power and royalty rather than gender roles.[46] The spears were most likely also symbolic, and their placement with both skeletons
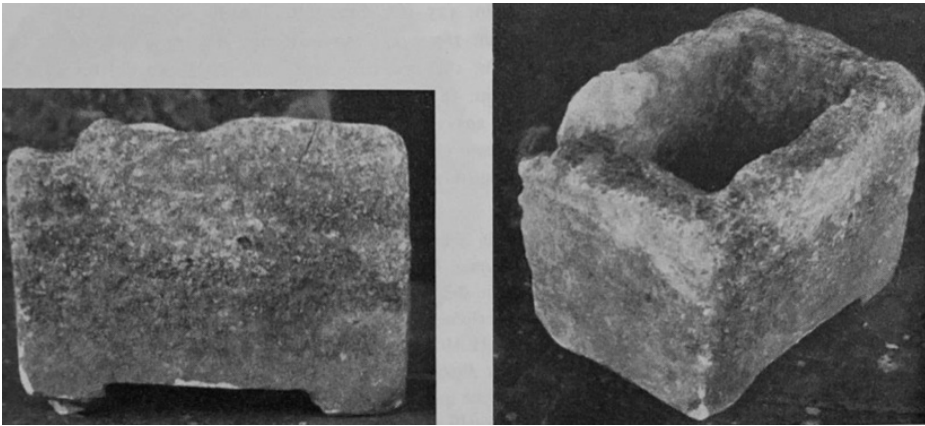
Figure 3: Cinerary urn from the cremation burial in Necropolis 1, Papena. Notizie degli Scavi di Antichità, s. VIII, vol. 21 fig. 2 p. 25.

suggests that they were emblems of power rather than of masculinity or warriorhood. Therefore, while it is not possible to accurately determine the specific sex or gender of the skeletons, it can be inferred from the ambiguous placement of the grave goods and the inclusion of symbolic weaponry that it was their elite status, and not their gender, that society deemed most important about these two individuals upon their death.

The second burial with spear tips is a cremation burial found in Necropolis 1 in the plain of Papena, outside of Siena, dated to the second half of the second century BCE. This cremation burial was officially excavated by K. Philips in 1964, however, it had previously been uncovered by locals in the 1930s.[47] Most of the burial's contents had been removed and brought to the Fattoria di Frosini, where the Count of Spalletti-Trivelli's family kept possession of the items until Philips was granted permission to study them.[48] The cinerary urn, made of "fetid stone" (*pietra fetida*), was found without a lid, along with a bronze mirror, clay vessels, and an iron spear tip.[49] Upon excavation of the original site, a second spear tip was discovered, as well as numerous ceramic plates, bowls, kantharoi, two-handled cups, and jars.[50] The cinerary urn, seen in Figure

3, is of a type typically found in Etruria between the third to first centuries BCE and is described by Philips as "modest."[51] The locals who originally found the urn said the mirror and the first spear tip were inside the urn when they found it, while the ceramics were grouped around and under the urn.[52] The larger spear tip, seen on the left in Figure 4, is conical in shape, measuring 27.3 cm long, and at its greatest point, 3 cm wide.[53] The second spear tip, seen on the right in Figure 4, is approximately 19.3 cm long, with a maximum thickness is 1 cm; Philips identifies this as a fragment of the central part of a spear tip that was probably also originally conical.[54]

Unlike the previous example, Philips does not attempt to assign gender to any of the items or the burial itself, and the topic is conspicuously absent from discussions of the burial. Indeed, only three item types found in the burial are traditionally gendered in past scholarship: the two spear tips and the bronze mirror. Just as spear tips are habitually considered to be masculine objects, Etruscan bronze mirrors have long been considered a feminine grave good.[55] While this gender assignation is just as debatable as that for spear tips, a scholar in the 1960s would probably not have viewed it as such. Why then did Philips not

attempt to gender the burial? The answer is almost certainly because the only two grave goods with gendered connotations are associated with different genders. For Philips, the spear tips were masculine, the mirror was feminine, the ceramics could be for any gender, so what could be the gender of the deceased? When gender is viewed as a binary, as Philips was likely viewing it, interpretations of gender are limited and narrow, disallowing the possibility that gender was not static. The probability that the grave goods indicated something other than gender was also ignored.

Similar to the previous example, the spear tips do not seem to be emblematic of gender, but instead, display status and power. The mirror and the large number of ceramics would also have functioned as status symbols, as they were not readily available to all strata of Etruscan society. Osteological analysis is not possible as the ashes and bone fragments did not survive, but the embodied gender can be postulated from the grave goods. If Etruscan mirrors are as closely associated with Etruscan women as most scholars agree that they are, then this may be a burial of a local elite woman, with the inclusion of the spear tips emphasizing her status rather than her gender. However, not all scholars agree that Etruscan mirrors are strictly a woman's item.[56] Etruscan mirrors have received the same treatment as spear tips in scholarship with many scholars relying on antiquated gender stereotypes to assume the gender of the deceased. Thus, the gender identity of the Papena cremation is ambiguous, further indicating that the spear tip is meant to portray status and power, not gender.

The final burial I will investigate, though it is the most recently excavated, lacks the most evidence as no official archaeological site report or article has been published yet. In 2013, an intact burial dated to the late seventh, early sixth century BCE. was discovered at the Doganaccia Necropolis at Tarquinia by Alessandro Mandolesi and his team[57]. This tomb was widely reported

in popular media[58]. Two funeral benches were found inside the small, single chamber rock-cut tomb, one on the left which held a skeleton and one on the right which held cremated remains[59]. The inhumation burial included a spear, a *fibulae*, and a pyxis containing jewelry which [60]. The grave goods associated with the cremation burial were not reported in the news, but photos show that a vessel, perhaps an oinochoe, was placed on top of the remains. Other grave goods included[61]. an intact Corinthian vessel, and other vessels and plates (perhaps olpai and oinochoai).

Because of the accompanying spear and other bronze objects, the inhumation burial was almost immediately identified in the media as that of a royal male warrior.[62] The cremation burial, on the other hand, was reported to be female. It is unclear where the statements about the inhumation being a royal
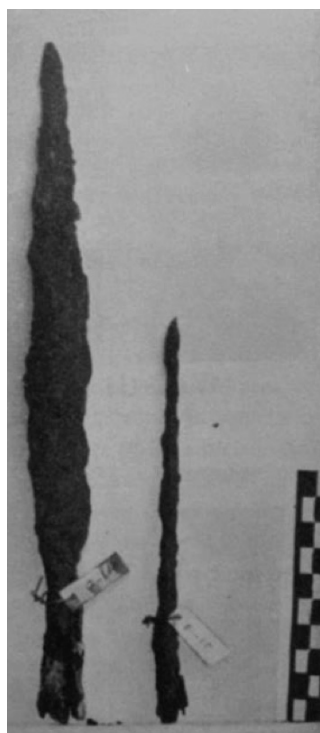

Figure 4: Two iron spear tips from the cremation burial in Necropolis 1, Papena. Notizie degli Scavi di Antichità, s. VIII, vol. 21 fig. 9 p. 38.

male originated, as Mandolesi only stated to the news that the burial was that of an upper-class individual.[63] Nevertheless, soon after the initial media report, osteoarcheological analysis revealed that the inhumation burial was a female and the cremation burial was a male.[64] It is unknown what type of osteoarcheological analysis was conducted, as no physical anthropologist was present during excavation and no scientific study of the remains has been released.[65] Once this new "evidence" was reported in the media, however, Mandolesi released a statement and a new interpretation of the burials. He stated that it is not usual to find women with spears in burial assemblages, which is why they originally thought the inhumation was a male.[66] He further stated that the skeletal analysis of the inhumation burial and male cremation burial makes it likely the spear was placed in the tomb as a "symbol of union between the two deceased."[67]

As Lucy Shipley notes, this tomb and the ensuing media and misidentification of the inhumation burial reveal the androcentrism deeply embedded in Etruscan archaeology.[68] The first interpretation, that the inhumation burial was a male warrior, overrode any other possible gender identifications solely based on the presence of a spear. The second interpretation is even more troubling: even though the skeleton was identified as female, Mandolesi was reluctant to attribute possession of the spear to that body, implying that it belonged to the cremated male who gave his wife the spear as a symbol of their union. This interpretation falls into the same androcentric trap that Arnold described when two bodies of different sexes are found in the same tomb. The male is assumed to be the primary internment, and the female is relegated to the status of another grave good.[69]

The spear was placed with the female body within the Doganaccia tomb, so it can be assumed that it belonged to that person. Since both biological sex and gender can be socially constructed, the classification of the individual's sex as female does not

necessarily mean that they would have identified as such. As previously mentioned, Bartolini and Pitzalis have argued that weapons are often meant as symbols of power in elite Etruscan tombs rather than indicating warriorhood or marriage. Without the full excavation report and inventory of all the grave goods, a limited interpretation of this tomb could be that the female skeleton was a local elite who held a position of power or influence. While the skeleton is female, an Etruscan may have seen the deceased primarily as an elite; an elite who may not have embodied their gender in a traditional way due to their position of power. Additionally, if the gender of the deceased was also female, this tomb could represent a woman who was born into a higher status family than the accompanying male skeleton and subsequently held a higher position in Tarquinian society than the male. This theory is supported by the female being buried with precious metals and a pyxis full of jewelry, while the photos reveal no indication of bronze or other metals with the male skeleton. However, without more information, these interpretations are not secure, although they do show that interpretations informed by gender and queer theory rather than antiquated androcentrism are viable.

Conclusion

Gender in Etruscan society has long been assumed to be binary and aligned with perceived sex. These ideas crystallized centuries ago, and Etruscan archaeology has not yet rid itself of them, even when presented with ample evidence to the contrary. These biases are most apparent in the interpretation of burials, especially when weapons are present. In this paper, three case studies were introduced where spear tips were among the grave goods, leading to misinterpretations or confusion about how to gender the deceased. By applying a theoretical framework heavily influenced by gender and queer theory, the

spear tips can be interpreted not as symbols of masculinity, but rather as symbols of power and aristocracy. Thus, previous gender identifications of burial assemblages should not be taken at face value, and there is a need in Etruscan archaeology for a reinterpretation of gender identities that were in the past assumed, rather than informed. Until this is done, interpretations of Etruscan society will continue to reflect ideas established in the eighteenth century.

Endnotes:

1 Sandhoff 2009; Bonfante 2009.
2 Butler 1990, 22.
3 Butler 1990, 22
4 Butler 1990, 22.
5 Butler 1990, 94.
6 Butler 1990, 94.
7 Voss 2000, 184.
8 Blackmore 2011, 78.
9 Blackmore 2011, 78.
10 Blackmore 2011, 77.
11 Blackmore 2011, 79.
12 Hollimon 2017, 53.
13 Hollimon 2017, 53.
14 Sofaer 2006, 92.
15 Morris 1987.
16 Arnold 2006, 137.
17 Cougle 2009, 57.
18 Bonfante Warren 1973, 245; Bartolini and Pitzalis 2016a, 810–811.
19 Bartolini and Pitzalis 2016a, 810–811.
20 Bonfante 2009.
21 Bonfante 2009.
22 Sandhoff 2009; Bonfante 2009.
23 Sandhoff 2009, 97–108.
24 Sandhoff 2009, 97–98.
25 Whitehouse 2001, 86; Bartolini and Pitzalis 2016b, 821.
26 Bonfante 1978, 20.
27 Bartolini and Pitzalis 2016b, 824.
28 Bartolini and Pitzalis 2016b, 824–825; Nielsen 2002, 178–179.
29 Nogara 1916, 37.
30 Nogara 1916, 63.
31 Nogara 1916, 63.
32 Nogara 1916, 63.
33 Nogara 1916 63–64
34 Nogara 1916, 63.
35 Nogara 1916, 63.
36 Nogara 1916, 63.
37 Nogara 1916, 65–78
38 Nogara 1916, 65.
39 Nogara 1916, 79.
40 Nogara 1916, 79–81.
41 Nogara 1916, 81.
42 Nogara 1916 65, 75.
43 Arnold 2006, 146.
44 Bonfante 1978, 20.
45 Nogara 1916, 63.
46 Bartolini and Pitzalis 2016b, 824.
47 Philips 1967, 23.
48 Philips 1967, 23.
49 Philips 1967, 23.
50 Philips 1967, 35–38.
51 Philips 1967, 24–25.
52 Philips 1967, 23.
53 Philips 1967, 38.
54 Philips 1967, 38.
55 De Grummond 1982.
56 See Izzet 1998.

57 Shipley 2015, 472.
58 Ghose 2013a, 18 October; Ghose 2013b, 20 October.
59 Shipley 2015, 472.
60 Shipley 2015, 472.
61 Shipley 2015, 473.
62 Shipley 2015, 473.
63 Shipley 2015, 473.
64 Shipley 2015, 474.
65 Becker 2016, 183.
66 Shipley 2015, 474.
67 Ghose 2013a, 18 October; Ghose 2013b, 20 October.
68 Shipley 2015, 474–475.
69 Arnold 2006, 146.

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Almost Heaven, West Arkadia: Reconsidering the Ritual Use of Mountains in Late Bronze Age Greece

Erin Brantmayer

The tendency in Bronze Age Aegean scholarship has been to view the mountaintop ritual sites of the Greek mainland in the Mycenaean period through the lens of the Minoan peak sanctuary. More recently, efforts have been made to consider these sites according to the highly categorized type of the peak sanctuary, or very broadly. Yet, these sites do not fit into the borrowed Minoan classification and feature commonalities that limit the usefulness of broad definitions. While a clear picture of the use of these mountains is difficult, it is clear that they exist apart from the ritual connotations of neighboring mountains despite proximity. This paper begins with a discussion of terminology in order to clarify this ongoing debate. Then, to better understand the ritual use of these sacred peaks, all nine sites that have been reasonably dated to the Mycenaean period are discussed. After briefly covering the data from these mountains, Mount Lykaion is presented as a case study for the use of a variety of methodological techniques aimed at answering questions of usage and ideology. This study presents the mountain in its local, regional, and broader contexts, using topographical and geographic data, viewshed analysis, and phenomenology.

Introduction

The study of mountains as sacred sites in Mycenaean Greece is one fraught with problems of terminology, typology, and documentation.[1] Treatments of sanctuary sites on the mainland are too often filtered through the lens of the Minoan "peak sanctuary"[2] - a type of sacred space imbued with a rigid and heavily developed set of identifying criteria.[3] Examining these mainland peak sites using those strict criteria inevitably leads to typological issues. While the perception of mountains as sacred landscapes is common throughout the world, the ideology and usage associated with them differ from culture to culture. The various groups present in the area of modern Greece during the Bronze Age certainly communicated and associated with each other, but this does not necessitate a similarity or borrowing of religious thought as it pertains to mountains. More recently, there has been a scholarly effort to categorize Mycenaean mountaintop sites as "open-air shrines" or "pilgrimage centers", but these terms also come with their own sets of criteria.[4] While these more generalized typologies allow for greater flexibility within specific designations, they fail to access questions of meaning in unique contexts and strip these sites of their comparative value by using vague standards.

Further complicating issues of identification is the common problem in Aegean archaeology of collecting without publishing. Excavations from the twentieth century and earlier yielded materials and remains, but have never been published, and some are now lost. Of the 88 identified mountaintop sites on mainland Greece, nine date to the Bronze Age, yet only one has been extensively published.[5] This stands in stark contrast to the 52 Bronze Age peak sanctuaries on Crete which have been the subject of scholarly debate in a number of publications for decades.[6] Of course, the problem for the mainland is not merely one of publication, but also excavation. Many of those 88 sites are based on small-scale surveys and surface finds.

While issues of excavation and documentation cannot hope to be addressed in this paper, it is possible to further illuminate and add dimension to the data that is available. In pursuit of this, this paper briefly presents all the available information for the nine sites that have been identified thus far. As the majority of these are either unpublished or included as the results of surveys or emergency excavations, the site of Mount Lykaion is used as a case study as it has been intentionally excavated for over a decade. This paper offers a methodological approach to applying recent techniques, particularly phenomenology and geospatial approaches, to older data by taking these methods and applying them to a single site.

Terminology

Reasons for the belief in mountains as sacred locations have been condensed into seven symbolic attributes: looking upwards, moving upwards, highness, transcendence, the proximity of peaks to the "heavens", the difficulty of reaching the top, and even the impossibility of reaching the top.[7] This applies to the landscape an association with the sky as the space that is above the mountain, and inherently brings up issues of accessibility, something that factors into the typologies discussed below. Of note here is the distinction between what is typically called a "sacred mountain" and what seems to be happening in the Greek world. Sacred mountains are isolated places that are often not meant to be reached, hence the difficulty or impossibility of accessing the top for the average person and the presence of an element of transcendence or even transgression.[8] However, the mountain sites in Greece, those used by the Minoan cultures on Crete, the Mycenaeans on the mainland, and even further into the later periods of Greek history, *are* accessible places where ritual happens, and not unreachable homes of the gods, with the notable exception, perhaps, of Olympos.

The categorization of the Minoan "peak sanctuary" was first established in the early twentieth century when Sir John Myres and Sir Arthur Evans began excavations at Petsophas and Mount Jouktas respectively on the island of Crete.[9] Subsequent excavations and survey projects have identified some 40-60 possible peak sanctuaries on Crete, depending on whose criteria are followed. For Bogdan Rutkowski, the peak sanctuary is defined by its position:

> "on the mountain- or hill-top, but not necessarily on its highest summit. Natural terraces, rocks, crevices or an entrance to a cleft or cave are normal features. The area was covered by low plants, but trees are rare. Constructions survive in a few cases, they are walls of buildings, terraces and walls surrounding the sacred area, and altars. The sacred mountain is always situated at a distance from the settlement or town[.] Only the presence of votive offerings in addition to the layout of the site, are a safe criterion for defining a given site as a peak sanctuary".[10]

Juxtaposing Rutkowski's focus on the topographical features of a potential site is Alan Peatfield, whose attention is more on the material remains. Peatfield agrees with Rutkowski on the significance of the summit location and the considerations of human-site relationships, but stresses the importance of votive offerings.[11]

These approaches, with a few others, were recently combined by Alexis Belis in her 2015 survey of Greek mountaintops. Beginning topographically, Belis notes that peak sites needed to be on those summits with the best visibility.[12] Belis, here, includes both the view from the peak to nearby settlements, to other mountain tops, as well as the best view of the peak itself from its associated settlement. The peak must also be accessible from its settlement. The journey from a settlement to a peak sanctuary was rarely over an hour.[13] Assemblages found

at peak sites vary, but typically include the categories emphasized by Peatfield of animal figurines, human figurines, and human limb models.[14] Limited architectural features, pebble scatters and signs of intense burning should also be considered.[15] Many of these features are not found at mainland sites.[16]

Peak sites on the mainland have alternatively been referred to as "pilgrimage centers". Konstantinos Kalogeropoulos broadly defines a pilgrimage center as "a sacred place that attracts worshippers from a wide area, a whole region, or even a larger multi-ethnic area".[17] He also notes three criteria, a marked step down from the many stipulations of "peak sanctuary". First, the site must be geographically distant from the worshipper's settlement and, as such, be able to accommodate worshippers nearby for a short time. Second, archaeological remains must denote ritual activity in some way. Finally, a site must be compared to other pilgrimage sites from the same time period and region.[18] These criteria are rather broad and entirely dependent on the previous identification of a similar pilgrimage site.

The better terminology, perhaps, is simply the "open-air" sanctuary or shrine.[19] This raises the problem of broadness again, however, as these open-air sites are not restricted to mountains or hills. Furthermore, there has been a recent push to differentiate sites on high mountains from those on low hilltops.[20] While there does seem to be some distinction between the characteristics of these sites, the small sample size of both makes this difference blurry at best.[21] Yet Natalie Sussman rightly notes that what we distinguish as "mountain" and "hill" are not necessarily reflected in the ancient Greek mindset.[22] This is complicated further still in the Mycenaean period, a time devoid of written data beyond the Linear B records. To avoid these various terms and their difficulties, hereafter "open-air sanctuary" or "mountaintop sanctuary" are used to refer to the nine sites discussed. While broad, this classification circumvents issues

of comparison that arise when using already established terminology.

The Mountaintop Sanctuaries of Late Helladic Mainland Greece

As briefly mentioned above, of over eighty identified sites on mountain peaks on the mainland, only nine have yielded material dating to the Bronze Age.[23] In alphabetical order, these are Mount Arachnaion in the Argolid,[24] Mount Hymettos in Attika,[25] Mount Kronion in Elis,[26] Mount Kynortion in the Argolid,[27] Mount Loutraki in the Megarid,[28] Mount Lykaion in Arkadia,[29] Mount Mavrovouni in Boiotia,[30] Mount Oros on Aegina,[31] and Profitis Elias in Arkadia.[32] Of these nine, only Kynortion and Lykaion have seen extensive excavations, due to Mount Kynortion's association with the later sanctuaries of Apollo Maleatas and Asklepios at Epidauros, and Mount Lykaion's connection with the later sanctuaries of Zeus and Pan and the games that took place there. The remaining seven

have been subject to a variety of rescue operations and surveys with differing levels of subsequent publishing. All have some degree of ritual activity, identifiable through the presence of figurines and drinkware. In addition, all have shared topographical features, but this is mostly restricted to their elevation above sea level and presence on a peak, whether it be a hill or mountain.

The archaeological remains at each site are presented in Table 1 with the data grouped by regions.

The only commonality to all sites is the presence of pottery, which varies from small quantities of sherds to intact vessels. The majority of the vessels found are drinkware, suggesting the occurrence of ritualized drinking, though cooking vessels have been noted at Mount Arachnaion.[33] Metal remains include bronze weapons and tools. Seal stones found at a few locations have been used to argue for elite or official cult practice.[34] Conuli, defined as terracotta spindle whorls, buttons, or decorations,
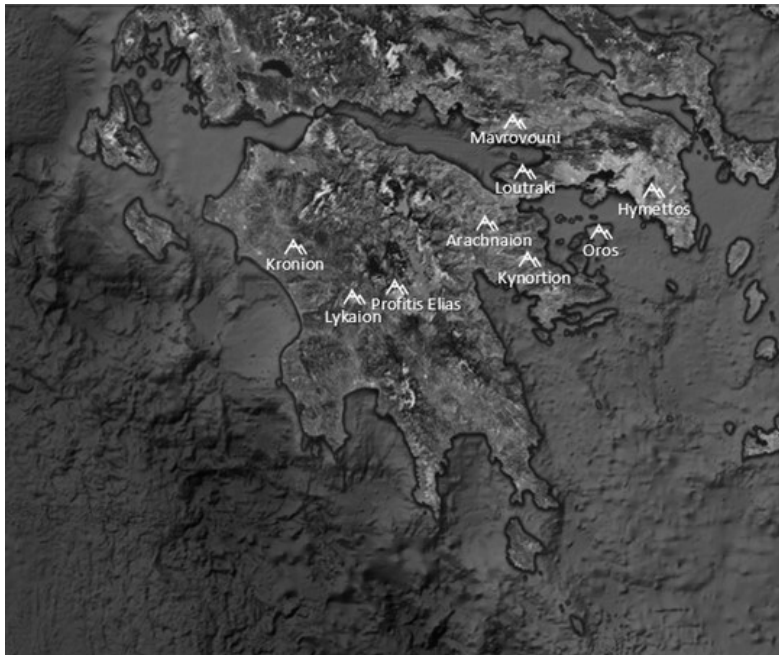

Figure 1: Map showing the locations of the nine mountaintop/open-air sanctuaries in use during the Mycenaean Bronze Age.

Site Name	Region	Elevation	Pottery	Metal	Seal Stones	Conuli	Figurines (Votives)	Animal Remains	Burning
Oros	Aegina	532 m	✓	✓			✓		
Arachnaion	Argolid	1,119 m	✓	✓	✓	✓	✓		✓
Kynortion	Argolid	300 m	✓	✓	✓		✓	✓	
Lykaion	Arkadia	1,382 m	✓		✓		✓	✓	✓
Profitis Elias	Arkadia	1,100 m	✓			✓			
Hymettos	Attika	1,026 m	✓						
Mavrovouni	Boiotia	648 m	✓						✓
Kronion	Elis	123 m	✓				✓		
Loutraki	Megarid	1,069 m	✓				✓		

Table 1: The data collection from the nine mountaintop/open-air sanctuaries that dates to the Bronze Age. Note the lack of pebble scatters and metal votives. Metal weaponry and terracotta votives were relatively common.

are common to Mycenaean sites in general though rare at these ritual locations.[35] Human figurines are exclusively made of terracotta at these sites, typically of the Phi and Psi types, and animal figurines are usually of bulls. There is little evidence for burning and animal remains, due either to the absence of these activities or the lack of large-scale excavation. Though there was evidence of burning at both Mount Arachnaion and Mount Mavrovouni, the former has published no comprehensive catalogue of the animal remains found and the latter has not been excavated.

The sites with the most extensive remains are, unsurprisingly, those that have been the subject of comprehensive excavations. Mount Arachnaion was investigated from 2008 to 2010 as part of an emergency excavation conducted prior to the building of a road and the installing of a large antenna on top of the mountain.[36] Mount Kynortion has been the subject of many excavations as it has exceptional material from later periods, but the Mycenaean remains have not been investigated since the 1980s.[37]

Mount Lykaion is the only site with both extensive excavations and publications. The mountain has been the subject of survey and digging projects since 2004, though only reports from the 2004 to 2010 seasons have yet been published.[38] Due to the sizable body of published materials from the site, Mount Lykaion will serve as a case study for exploring the meaning and use of the objects found at the site.

Case Study–Mount Lykaion

As the most widely excavated mainland Bronze Age mountaintop site, Mount Lykaion is the best published of the open-air mountaintop sanctuaries. Studies of its acoustic environs, geophysical context, and presence in Linear B records have been conducted alongside long-term investigations of both the upper and lower sanctuaries.[39] The site experienced continual use from as early as the Final Neolithic to the Hellenistic period and, in addition to the Bronze Age ash altar, also features architecture associated with the later sanctuaries of Zeus and Pan as well as

facilities for the Lykaion games.

The Mycenaean material from the site is extensive. The ash altar at the site, originally excavated in the early twentieth century by Konstantinos Kourouniotis, is believed to be 30 m in diameter and about 1.5 m thick.[40] The soil is dark and ashy, full of burnt animal remains, stones, and votive objects. More recent scientific analyses have determined that this soil is actually highly fragmented burnt material consisting of animal remains.[41] Preliminary results of other analyses confirmed the presence of burnt grains in the ash and wine in the vessels.[42]

There are several hundred Mycenaean sherds that were excavated from the ash altar, in addition to both earlier and later material.[43] These finds include goblets, bowls, cups, kylikes, mugs, dippers, askoi, feeding bottles, and stirrup jars.[44] In addition to the numerous vessels, there have also been found several clay animal figurines, a clay human figurine, and a lentoid seal stone.[45] As noted by the excavators, these items, in conjunction with the large ash altar and a possible built platform, denote clear signs of ritual use in the Mycenaean period.
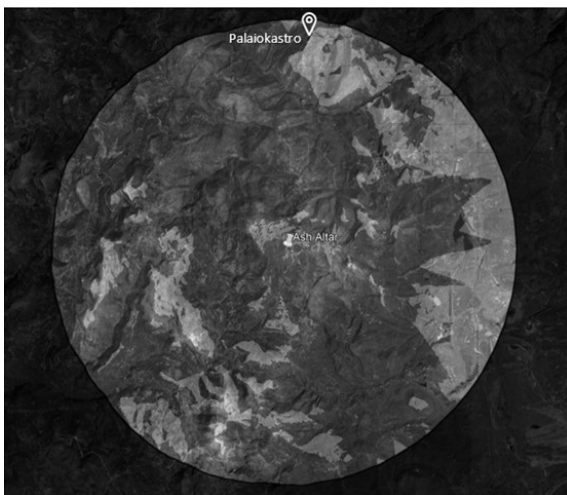

Figure 2: Google Earth-generated viewshed from the ash altar of Mount Lykaion with Palaiokastro.

In order to better understand the function of this mountaintop sanctuary in the Bronze Age, this paper presents first its topography and location in the physical landscape. After setting the site regionally and discussing its interconnectedness with other sites in the area, several methodologies are used to better explore its function in the ritual landscape. These are intervisibility, including viewshed and sightline analysis, astronomical considerations, and phenomenology.

Mount Lykaion occupies a border zone between Arkadia and Messenia, a natural boundary between these two lower-lying landscapes. It has been argued recently that the mountain itself fell within the political control of Pylos.[46] The peak is in proximity to many settlements sites within the Pylian purview as well as sites to the east; however, the only one of these sites that is visible from the peak is Palaiokastro which has evidence of a Mycenaean cemetery.[47] As a necropolis, this is not a settlement itself, but signifies the proximity of a settlement that was in use during the same period as the ash altar on Mount Lykaion.[48] Conducting a rudimentary viewshed analysis via Google Earth shows that the site lies within the view provided from the summit and its ash altar, but just barely. As the closest identified settlement to Mount Lykaion, it is thus entirely possible that the locals of this area could have had a high degree of inter-site visibility.[49]

Of note geographically are clear sightlines west to the Ionian coast, and north to the plain of Elis and the island of Zakynthos, and to Mounts Erymanthos, Aroania, and Kyllene. In the east the sightlines extend to Mount Mainalon, and in the south to the Messenian Gulf as well as to Mounts Tetrazi, Taygetos, Ithome, and Parnon.[50] These locations are spread throughout the Peloponnese and suggest interconnectedness. Settlements have been noted near Mounts Taygetos,[51] Ithome,[52] Parnon,[53] and Erymanthos,[54] but these peaks have not been investigated for ritual activity.

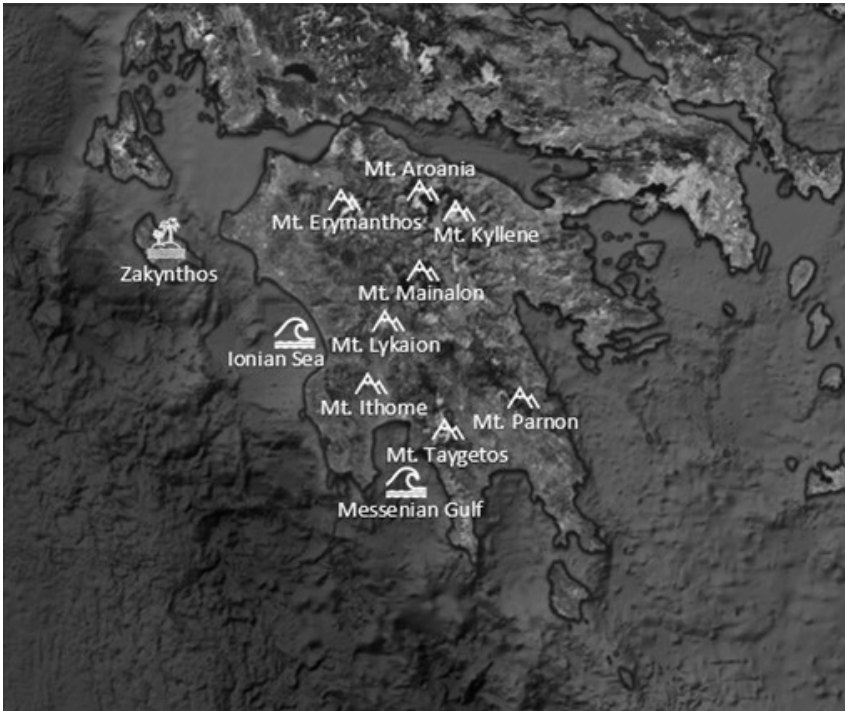Brent Davis' 2014 monograph on Minoan

Figure 3: Geographical features with clear sightlines from Mount Lykaion. Further study is needed to determine how viewable Mount Lykaion is from these sites.

Figure 4: The September equinox sunrise from Mount Lykaion.

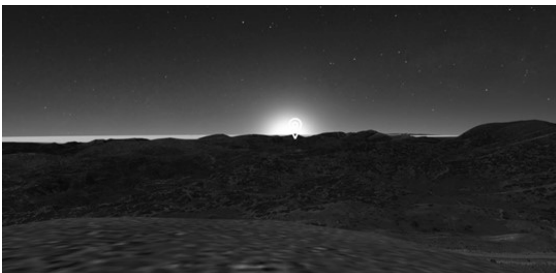Figure 7: The June solstice sunrise from Mount Lykaion.

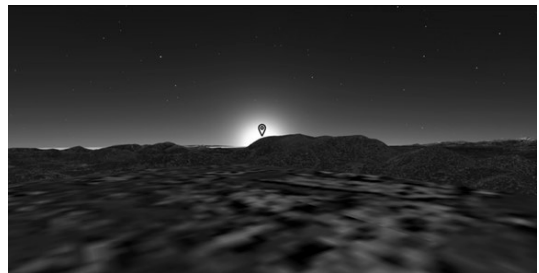Figure 5: The September equinox sunset from Mount Lykaion.

Figure 8: The June solstice sunset from Mount Lykaion.

Figure 6: Locations of the ash altar at Mount Lykaion, the peak seen in the September equinox sunset from Mount Lykaion, and the Mycenaean site of Bassae.

inscribed stone vessels offers further insight into the uses of peaks in the Minoan world that may be relevant for Mount Lykaion.[55] In an appendix, he notes that many of the Minoan peak sanctuaries are intervisible with each other but also afford sightlines of sunsets and rises during solstices and equinoxes.[56] Looking to the east on either equinox, the sun rises over the Parnon mountains.[57] Sunset sightlines on either equinox from Mount Lykaion afford a view of an unidentified low peak not far from the site of Bassae. On the solstices, there are more prominent peaks in the sightlines from the mountain, but further survey needs to be conducted to identify whether or not there are Mycenaean, or later, sites in the locations in view. Conducting this analysis via Google Earth also offers methodological issues of placement and location that might be further helped by surveying.[58] An added complication is that these views are modern ones. Additional study is needed to identify the Bronze Age paths of the equinox and solstice. Therefore, at this time, it is a stretch to say that ritual activity on Mount Lykaion benefitted from or utilized calendrical observations.

In addition to the need for a survey investigation to further explore the possible astronomical function of the site, phenomenological observations can help to illuminate the potential ritual use of Mount Lykaion. Sussman, in fact, has urged the use of a combination of phenomenology

and GIS studies in order to make up for shortcomings in either methodology.[59] The site experiences high winds and during sacrificial rituals would have smelled of smoke and cooking meat, and of the wines used in drinking ceremonies, and of the people who participated in both. Given the large size of the ash altar, it is also likely that a haze from the smoke would have been carried on the wind, visible from quite a distance. Anyone who has spent time around a fire knows that it can be tasted as well as smelled. The height of the mountain makes it quite a hike from the low-lying plains nearby, adding to the arduous but magnificent experience of reaching its peak. Ongoing acoustic studies will hopefully illuminate the soundscape of the sanctuary.[60] Experimental archaeology might also be a helpful avenue for the recreation of the experience of being at the altar during ritual use.

Conclusions

The mountains of mainland Greece occupy a geographic and sacred landscape that is not yet well understood. Their counterparts on Crete and in other places around the globe offer some useful lines of inquiry, but the application of such parallels can lead to problematic comparisons and issues of categorization. By presenting the finds from the Mycenaean open-air mountaintop sites on the Greek mainland, this paper identifies commonalities and illustrates the

potential ritualistic nature of these sites. The framework used to analyze Mount Lykaion here as a case study can be applied to the others. Overall, further excavation, research, and rigorous publishing is needed to more comprehensively understand the ritual use of these mountaintops. The only mountaintop sanctuary site on the mainland to have both extensive excavations and publications, Mount Lykaion, remains the best case study available to scholars for the study of mountaintop rituals in the Bronze Age Greek mainland. While further survey is needed to fully understand the possibility of intervisibility and interconnectedness between it and surrounding sites, this study has shown that, at the very least, mountains were not observatories for the local Mycenaeans but offered prominent, transcendent, and meaningful terrestrial spaces for the practice of religion in the Bronze Age.

Endnotes:

1 For the purposes of this paper, "Mycenaean" is here defined as a time period on mainland Greece from LHIA to LHIIIC in order to juxtapose this period and culture on the mainland with its earlier counterpart, "Minoan", on Crete and its nearby islands.
2 In particular, cases for moving away from Minoan religious identifiers for mainland sites have been argued by Rutkowski 1986, Pilafidis-Williams 1998, and Marakas 2010.
3 Belis 2015, 9–11.
4 Kalogeropoulos 2019.
5 Belis 2015, 229.
6 Belis 2015, 9–11.
7 Naess 1995, 2.
8 Naess (1995, 2) notes that while in Chinese traditions it is a good thing to be able to reach the summit of a sacred mountain, in nearby Tibet and in Hindu traditions it is not.
9 Myres 1902–1903, 356–87; Evans 1921, 153–59.
10 Rutkowski 1988, 74.
11 Peatfield 1992, 60.
12 Belis 2015, 15.
13 Belis 2015, 17.
14 Belis (2015, 19–23) offers a more robust treatment of the variety of artifacts. Suffice it to say that in addition to these three types in a number of different styles, commonalities seem to be stone libation tables and different kinds of feasting and drink wares.
15 Belis 2015, 26–28.
16 Salavoura 2018, 78–9.
17 Kalogeropoulos 2019, 222.
18 Kalogeropoulos 2019, 222–223.
19 Whittaker 2018, 55.
20 Salavoura 2018, 78–79.
21 Mount Oros and Mount Kynortion are the two low peaks, with elevations of 532 m and 300 m respectively. Both have associated settlement sites where the rest do not. See further Salavoura 2018 and Lambrinudakis 1981.
22 Sussman 2020, 178.
23 Belis 2015, 249–252. This is, of course, not an exhaustive list and merely reflects what has been found through excavation and survey. It is highly likely that there are many more sites of this type waiting to be identified on the mainland.
24 Rupp 1976; Psychoyos and Karatzikos 2016; Kalogeropoulos 2019.
25 Langdon 1976; Ruppenstein 2011.
26 Belis 2015.
27 Lambrinudakis 1981; Lambrinudakis 2002; Kalogeropoulos 2019.
28 Langdon 1976; Belis 2015.
29 Romano and Voyatzis 2014.
30 Belis 2015.
31 Salavoura 2018.
32 Forsén et al. 1999.
33 Psychoyos and Karatzikos 2016, 313.
34 Lambrinudakis 1981, 62; Whittaker 2018, 57.
35 Iakovidis 1977.

36 Psychoyos and Karatzikos 2016.
37 Lambrinudakis 1981. The site is the location of the sanctuary of Apollo Maleatas and is not far from the associated Asklepion of Epidauros.
38 Romano and Voyatzis 2014; Romano and Voyatzis 2015.
39 Jordan 2018; Mentzer et al. 2017; Davis 2008; Mahoney 2016a; Romano and Voyatzis 2014; Romano and Voyatzis 2015.
40 Belis 2015, 190.
41 Mentzer et al. 2017.
42 Belis 2015, 187.
43 This is the number of currently published pottery sherds. More recent unpublished presentations have the number in the thousands.
44 Romano and Voyatzis 2014, 592–610.
45 Romano and Voyatzis 2014, 616–617. The animal figurines are bovine and a bull in profile features on the seal stone.
46 Eder 2011.
47 Mahoney 2016a, 11. Interconnectivity has been explored in later periods via roads and trails by Pihokker et al., but not in the Bronze Age.
48 Demakopoulou and Crouwel 1998.
49 Mahoney (2016a, 11–13) lists many other settlements surveyed in the region, but they fall outside of this viewshed bubble. Likely the mountain would have been visible from many of them but at a distance to make the details fuzzy.
50 Romano and Voyatzis 2014, 570; Mahoney 2016b, 89.
51 Hope Simpson 2009.
52 Bennet 1998.
53 Dawkins 1910.
54 Townsend Vermeule 1960.
55 Davis 2014, 401–419.
56 Davis 2014, 402–404.
57 Images were generated using Google Earth. The equinox images are of the September solstice, but did not appear drastically different in March. For the solstice, the June dates were used.
58 For example, studies should be conducted on obscuration and sightline based on where one stands at the site.
59 Sussman 2020.
60 Jordan 2018.

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Breaking Pots? Late Neolithic Rituals Among Paraneolithic Hunter-Gatherers in North-Eastern Poland

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During the Late Neolithic, north-eastern Poland was inhabited by paraneolithic hunter-gatherers from the Neman cultural sphere who were occasionally visited by agrarian and pastoral groups. Despite the apparent exchanges, only a few sites are known from this area. In recent years, however, more data has appeared, part of which encompasses reoccurring relics of a ritual nature. In particular, these were associated with the use and damage of pottery. This article signals new interpretational possibilities related to breaking pots as an element of symbolic life. This article presents new avenues of interpretation related to the breaking of pots as an element of symbolic life.

Introduction

The area of north-eastern Poland, which includes the territory of northern Podlasie, Masuria, northern Mazovia, and the south-eastern shores of the Baltic Sea, is one of the least known archaeological regions of Central Europe for the Late Neolithic and the Early Bronze Age periods (ca. 2500 - 1750 BCE). Aside from a few site monographs, excavation reports, and issue articles, only a limited number of general studies have been compiled[1]. Although more serious syntheses have begun to be produced[2], they mainly focus on the presentation of newly discovered records and on the re-analysis of records already known thanks to earlier studies. Unfortunately, these publications lack wider interpretative discussions, especially in regard to the topic of spirituality and rituals. Despite the fact that, in many cases, sandy soils and disturbed stratigraphic contexts make it difficult to reach definite interpretations of the archaeological evidence, and the fact that the several decades of outdated documentation challenge our ability to properly contextualize this evidence, there exist four particularly interesting sites presenting unique discoveries related to the symbolic sphere of prehistoric life in which pottery played a prominent role. These are sites no. 3 and no. 6 in Supraśl (northern Podlasie), site X in Ząbie, and site II in Szestno (Masuria) (Fig.1). These sites were associated with the ritual and sepulchral activities of various Late Neolithic and Early Bronze Age communities, including the indigenous groups of the Neman cultural sphere and the exogenous societies of the Globular Amphora Culture and Corded Ware Culture. The latter groups were both characterized by a subsistence economy based on pastoralism, as well as by their links to the chalcolithic Bell Beaker phenomenon[3]. At these sites, relics of activities that can be considered ceremonial or sepulchral have been discovered. These finds were accompanied by significant quantities of pottery fragments coming from features and cultural layers.

Analyses carried out recently on these artifacts have shown that they are highly fragmented and represent specific vessels, with most of them having been identified from
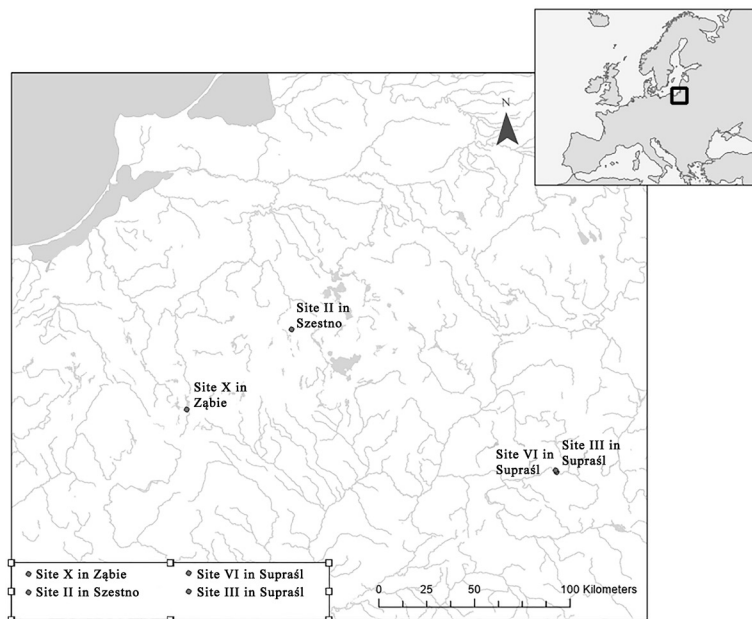

Figure 1: Location of sites related to ritual activities of Neman cultural sphere communities.

single sherds[4]. Rim and body pieces were dominant, and a significant lack of bottoms was also noted. In some cases, the pottery was accompanied by other unusual objects. All these factors indicate the presence of a structural deposition that may have been associated with supra-utilitarian behavior. The concept of "structured deposition" has been prevalent in archaeological interpretation since the early 1980s. A key work in this area was the analysis of records from Late Neolithic Durrington Walls, UK, where Richards and Thomas recorded a set of behaviors associated with the selection, spread, and occurrence of uncommon artifacts within henges[5]. The concept they defined soon spread, and its application, with its fair share of praise and criticism[6], remains useful to this day. Fundamental to this approach is argument that "because ritual activities involve highly formalised, repetitive behaviour, we would expect any [associated] depositional patterns observed in the archaeological record to retain a high level of structure"[7]. Due to the presence of relics of atypical behavior at sites in north-eastern Poland, it is also worth considering the depositional structures occurring there. Since the contexts of the finds was related to the sepulchral and ritual sphere, the vessel fragments discovered there may be related to spiritual behaviors as well. Their presence could be the result of feasts[8] and the related deliberate breaking of containers. The custom of fragmentation was common throughout the world[9], for this reason its popularity makes it necessary to consider the presence of similar symbolic acts in the past. This article is an attempt to integrate data from the four sites mentioned above and to interpret them in the spirit of post-processual archaeology[10]. The pottery records have already been studied before[11], however, the behaviors underpinning their deposition were not investigated. Therefore, although the task is facilitated from the viewpoint of cultural affiliation, it remains a difficult one from an interpretative perspective.

Archaeological Background

The subject of the present study are the entanglements between pottery materials recovered during the excavation of four almost completely excavated sites from north-eastern Poland, and their eventual contextual properties that may be attributed to some supra-utilitarian activities.

Site no. 3 in Supraśl

This is a multicultural site located on a sandy elevation within the territory of northern Podlasie, in the Knyszyn Primeval Forest region. At the peak of this elevation, four sets of artifact assemblages associated with the Bell Beaker phenomenon, definitely foreign in this part of Central Europe, were discovered[12]. The clusters of archaeological materials were characterized by the repetitiveness of the deposited objects, both in terms of their forms, and their manufacturing processes (i.e. raw material). The assemblages contained fragments of decorated pottery (48 fragments), including s-shaped beakers, bowls with rounded walls, and storage containers, flint tools (with a large group of arrowheads), stone tools (blades, axes, arrow-shaft straighteners), amber ornaments, and a small amount of burnt human and animal remains. The application of radiocarbon dating was unsuccessful[13], however, according to typological analyses the complex may be dated to the middle of the 3rd millennium BCE.

Site no. 6 in Supraśl

This is a multicultural site located a short distance away from site no. 3 in Supraśl, on the floodplain of the Supraśl river[14]. During its excavation, two separate zones - a settlement and ritual one, consisting of a hut, a broken vessel, and a feature located next to them, were recorded. The latter was composed of a hearth in which a pouch was placed. The pouch contained a number of ecofacts and artifacts, including five

small fragments of differently decorated pottery vessels. The radiocarbon dating was unsuccessful[15] though the characteristic shape of the broken vessel found in front of the entrance to the shelter-like structure can be dated to the second half of the 3rd millennium, to the beginning of the 2nd millennium BCE[16].

Site X in Ząbie

This is a multicultural site located on the former island of Lake Łańskie, in Masuria[17]. As a result of the research carried out on the entire island, relics of a social and economic nature from the Neolithic and Bronze Age (partly destroyed by later activities from the early Iron Age) were recorded. This site began by the founding of a small Late Neolithic cemetery in the highest, central part of the then available area. The most numerous artifacts, however, came from the cultural layer, which, due to the later settlements, was fragmentary and was only preserved in small cavities. Favorable soil conditions allowed for the preservation of the remains of seven individuals. Only one of them was equipped with a vessel - an s-shaped beaker decorated with corded imprints. However, across the whole site a large number of pottery fragments were registered, of which about 350 came from vessels produced by syncretic communities, showing the cultural components of the local version of the Neman cultural sphere and allochthonous groups of Globular Amphora Culture, Corded Ware Culture, and Bell Beakers. According to ^{14}C dates, the period of activity at the sites is placed between 2890 and 1880 cal. BCE[18].

Site II in Szestno

This is a multicultural site located on a small island on Lake Sałęt about 60 km from Lake Łańskie and site X in Ząbie[19]. As a result of archaeological research, ecofacts and artifacts from the Late Neolithic period to the present day have been recorded. Due to Iron Age disturbances, the earliest stratigraphic

structures at the site were destroyed. Nevertheless, a stratigraphic analysis shows several concentrations of artifacts dating back to the turn of the Neolithic and Bronze Age. Among them, the most numerous were fragments of vessels (about 200) associated with local communities of the Neman cultural sphere and allochthonous groups of Globular Amphora Culture, Corded Ware Culture, and Bell Beakers. The radiocarbon dating of the site was unsuccessful[20]. According to typological analyses, the complex may be dated to the middle of the 3rd millennium BCE and the beginning of the 2nd millennium BCE.

Results

The pottery materials here presented are related to the local ceramic traditions known as the Neman culture and exogenous ones described as the Globular Amphora Culture, the Corded Ware Culture and the Bell Beaker phenomenon. The most numerous, however, are syncretic materials that combine the techno-stylistic and morphological components of all these, which is defined in the literature as traditions of the Linin and Ząbie-Szestno type[21]. Among them, the highest level of syncretism was visible in vessels' decorations.

The discovered pottery came from both closed contexts (i.e., features — pits, including those of unknown and ritual character, as well as burials), and open contexts (cultural layers). Apart from burials, in all analyzed cases, fragments of richly decorated but strongly fragmented and disassembled ceramics were joined by numerous artifacts, which included: flint tools (site no. 3 and no. 6 in Supraśl, site X in Ząbie and site II in Szestno), stone tools (site no. 3 in Supraśl; site X in Ząbie), bone tools (site X in Ząbie), and amber ornaments (site no. 3 and no. 6 in Supraśl 3). Sometimes, in favorable environmental conditions, numerous ecofacts were preserved, including post-consumption animal remains (site X in Ząbie), human remains (site X in

Ząbie), burnt human remains (site no. 3 in Supraśl), and burnt animal remains (site no. 3 and no. 6 in Supraśl).

The contexts of such finds were not strictly related to settlement or economic expressions, but rather had clear connotations of symbolic behaviors, including the feature from site no. 3 in Supraśl, which contained sets of the so-called Bell Beaker cultural package items, including pottery, flint, stone, and amber objects in various state of preservation (rather arising from the intentional behavior); the ritual and residential zone of site no. 6 in Supraśl, which consists of 1) a feature compound of different objects made of different raw materials and again preserved to a different extent (also rather related to the specific act) and 2) a broken vessel of syncretic character (Bell Beaker and Neman culture components); the sepulchral zone of site X in Ząbie along with a large number of features, which contained numerous post-consumption animal remains, fragments of pottery, and accompanying flint tools. This situation, however, is not so clear in the case of the somewhat "loose" finds from site II in

Szestno. It does not have a clearly defined ritual sphere, as well as identified features dating back to the turn of the Neolithic and Bronze Age. The reason for this is probably the activity of the later Iron Age communities that completely disturbed the stratigraphy of the site. Nevertheless, there were clear concentrations of pottery and flint artifacts on the island. There is similar uncertainty in the case of the cemetery from site X in Ząbie. There was only one vessel with cultural features of Corded Ware pottery, which does not correspond directly to other materials discovered both in the cultural layer and further features.

At all the above-mentioned sites, fragments of pottery from individual vessels were identified. This is best emphasized in the case of closed contexts, i.e., features from sites no. 3 and no. 6 in Supraśl and features from site X in Ząbie. In the first two cases, the discovered fragments seem to have been selected and deposited in symbolically engaged deposits[22]. In the case of features from Ząbie, the presence of specific fragments of vessels is more random. Nevertheless, it seems to be an effect of a

Figure 2: The exemplary set of vessels (coming from deposits discovered at site no. 3 in Supraśl), which are also registered within contexts of other discussed sites from northeastern Poland (Reconstruction 3d made by Mateusz Osiadacz).

planned activity connected with digging out shallow pits, which were then filled with artifacts and ecofacts. A similar situation is outlined in the records from site II in Szestno, but the lack of outlines of features visible in the excavation documentation makes definitive conclusions difficult.

Moreover, only fragments of decorated vessels were present at the analyzed sites. In most cases, whole vessels are represented by single pieces of pottery. Usually, they constitute a part of the rim. Interestingly, in this collection including 600 fragments of pottery, only a few bottoms were recorded. Thus, it is clear that the great majority of analyzed vessels were incomplete. Only smaller vessels are represented by a single piece. A slightly larger number of fragments were registered in the case of a few bigger containers. However, they were so incomplete that in many cases it was not possible to reconstruct the whole vessel. This incompleteness of the assemblage seems to be no accident. Since the four sites have been almost entirely excavated, the lack of additional fragments cannot be the result of incomplete research. Though taphonomic factors remain to be considered, the compact character of the features in the case of both sites in Supraśl and the clear boundaries and material richness of the features from site X in Ząbie seem to contradict that erosion had a significant impact on the state of artifact preservation. However, it could have been more significant in the case of site II in Szestno, where not only the outline of the features had not been preserved, but also the cultural layer itself has been greatly affected by later prehistoric and modern activity. Nevertheless, even there, some homogeneous concentrations of artifacts from the Neolithic and Bronze Age were visible.

The largest part of the collection consists of fragments from small vessels in the type of S-shaped beakers and bowls, as well as cups and bowls with rounded walls. An exemplary set of this type of vessels may be taken from four ritual features from site no.

3 in Supraśl (Fig. 2). Although other sites are characterized by a much larger number of pottery finds, analogous types of vessels and similar proportions, both in size and number, can be seen. This indicates the deliberate selection of vessel designs and types to be included in the deposits.

Discussion

Each object has its own unique biography, from idea to execution, to the manufacturing process, use, and finally removal of the artifact from everyday life[23], and prehistoric pottery from the sites in Supraśl, Ząbie, and Szestno should also be treated from this perspective. Fragments of vessels discovered in this area have individual characteristics related to the people who created and used them. Forms and ornamentation refer to several different archaeological units whose communities have been syncretized under the influence of cultural transmission. It seems that their creation and use also had an overriding social role, which may be observed through the entanglements between pottery discovered at the above-mentioned sites and their depositional context that may be attributed to some supra-utilitarian activities.

First of all, the ceramic assemblages are different from what is known from the area of the Central and Eastern European borderland in the Late Neolithic. Most likely, this difference is due to the fact that external influences introduced new forms and techniques of vessels manufacture to the area of north-eastern Poland and beyond. This, however, might have had serious consequences regarding pottery use as well. Earlier, large, sharply profiled vessels with pointed bottoms were known in the area. Richly ornamented vessels with different volumes and flat bottoms started to dominate the archaeological record of the Late Neolithic. In this group, eating and drinking pots, like beakers and bowls definitely prevail. The lipid studies carried out in recent years provide interesting data

in this regard. The analysis of the oldest Neman pottery (5th millennium BCE), conducted as a part of a bigger Neolithic transition project, revealed very few aquatic derived lipids (compared to other hunter–gatherer Ertebølle and Narva pottery), while predominant δ13C values of the fatty acids matched those of non-ruminant animals, including wild boar, brown bear, and even pig[24]. This may imply a culinary use of the vessels with an emphasis on food processing. Slightly different results are provided by analyses of single ceramic fragments from sites in north-eastern Poland, carried out not so much on the oldest, but on richly decorated fragments of "classical" Neman pottery (4th/3rd millennium BCE)[25]. Analyses of containers from two sites: Grądy- Woniecko and the one discussed in the text, Supraśl 6, showed the occurrence of morphine derivatives accompanied mainly by acids from plants and seeds. The presence of substances with narcotic properties may indicate a non-utilitarian use of the vessels, e.g. spirituality, but also medicine. The scarcity of data, however, does not allow a closer answer in terms of vessel use; they certainly had a wide range of applications, which contrasts somewhat with the results of lipid studies related to vessel forms that appear in this area in the Late Neolithic. While such analyses are only being performed for the area covered by the present discussion, data on this issue comes from research carried on analogous vessels in the Iberian Peninsula. The results of these analyses not only indicate the use of Bell Beaker vessels for the consumption of alcoholic beverages, but also their use as the main objects during rituals[26]. This may therefore mean that the appearance of this type of vessel in north-eastern Poland may be associated with accompanying novel social behavior. Nevertheless, the amount of data is too small to undertake such a daring discussion. This leaves us the contextual analysis of the ceramic finds, which, thanks to application of the "structured deposition" approach, reveals their symbolic meaning.

Second of all, the pottery materials presented here demonstrate unusual diversity. Indeed, they are related to various ceramic traditions, from the very local one known as the Neman culture, through the exogenous ones associated with the Globular Amphora Culture, the Corded Ware Culture, and the Bell Beaker phenomenon, all the way to other local but syncretic traditions defined as the Linin and Ząbie-Szestno types. This makes ceramics not only a carrier of cultural information and a marker of identity, but also a likely active medium of cultural transmission.

Third of all, the use of pottery showed variations. Pot sherds were discovered in different contexts, including well preserved features, pits, burials and cultural layers. The most interesting ones are the fragments coming from features which, in the case of the Supraśl sites, were accompanied by sets of unusual objects made of different raw materials and having different states of preservation. The artefacts from site X in Ząbie are also quite distinctive in terms of their characteristics. They included richly decorated fragments of pottery, which were accompanied by post-consumption animal remains and flint tools. Only single fragments of pottery were discovered at all the sites, and these were predominantly rims and bodies. Although later prehistoric activity was recorded at the sites, the absence of other vessel parts, especially bottoms, cannot simply be explained by the destruction of the cultural layer and features, especially in the case of the Supraśl sites, where undisturbed *in-situ* features containing a large amount of pottery were discovered. The recorded fragments seemed to be purposefully selected and deposited in symbolically engaged deposits. On the other hand, a different situation was observed at site in Ząbie, where the presence of specific fragments was more random. Nevertheless, this seemed to be the effect of a planned activity connected with digging out shallow pits, which were then filled with chosen materials. A similar situation was outlined at

site II in Szestno. Unfortunately, the degree of preservation of the features' outlines limits our interpretations.

Last but not least, both the primary and secondary function of the vessels was extremely important, as only fragments belonging to specific vessel forms came from all the presented sites. The largest number of them came from small vessels of the S-shaped beaker and bowl types, as well as cups and bowls with rounded walls. This presents a set of vessels that, in the Iberian Peninsula, would be treated as ceremonial rather than utilitarian. What is most interesting is that this set, with the exception of one site (no. 6 in Supraśl), is repeated in all contexts. This may indicate the widespread use of these particular vessels.

However, leaving aside the emergence of new exogenous behaviors, which, in the absence of more complete data including radiocarbon dating or lipid analysis, cannot be subject to further discussion, our attention should be drawn to the expediency of the deposits' composition. This is particularly evident in the case of the relics from the Supraśl sites, but elements of similar behavior are also visible in Ząbie. In all these cases, a specific structure of proceeding can be discerned, which involves the selection of appropriate materials in terms of quantity or even more important the quality (e.g. raw material, shape, decoration, degree of preservation) and their deposition. One of the most significant elements of this procedure was the use of pottery. However, it is not known for what purpose.

One possible explanation here may be the use of vessels in feasting rituals similar to the ones recorded on the Iberian Peninsula[26]. Comparable plenary behaviors are known from the environment of Late Neolithic communities across Europe and later times. They served in reinforcing social relations and strengthening collective memory[27], as well as empowering group, symbols, or traditions[28]. Therefore, there is

no objection to such meetings taking place in the Late Neolithic environment of the Neman communities, especially when one considers the impact that Bell Beakers had on the final transformation of paraneolithic hunter-gatherers into Early Bronze Age Trzciniec communities[29]. Perhaps it was precisely such rituals of eating together that became one of the catalysts of change that took place in this area at the turn of the 3rd and 2nd millennium BCE. New social behaviors may have led to changes in the development of social personality, which ultimately resulted in the emergence of a completely new cultural groups. The key to understanding this transformation may be the proper recognition of ritual motives and the course of these activities. The latter seems to be related to the fragmentation of vessels. As well as the sequence of the ritual itself, which was associated with the use of pots, the latter's exclusion from the cultural life cycle might also have been symbolic in nature. The breaking of vessels is a widespread behavior in cultures all over the world and occurred in different periods, from the Paleolithic to modernity[30]. They can have different connotations, but are primarily linked to so-called conspicuous consumption[31], which consisted of spending wealth to display social or economic power. This was related to a phenomenon described by J. Chapman as "the pleasure of fragmentation"[32]. In simple terms, this means the incredible spiritual satisfaction achieved when destroying objects. One consequence of this behavior may have been the collection of mementos of the event - picking them up, selecting them from clusters, or hiding them within special deposits. The fragments received during the fragmentation event might have constituted both a physical bond and an enchainment between the "magic" of an event/ritual and its participants[33]. According to a "synecdoche" approach, one fragment could have been not only a souvenir of the experience, but the experience itself[34] - implied is the belief that a part of something represents the whole, or that the whole may be used

to represent a part[35]. Such behavior would therefore constitute the highest expression of the individual's connection with an object which, according to post-processual archaeology, is not only a material thing but an expression of social and cultural identity — an inseparable part of personhood[36]. But not only could having fragments of the same object be an element strengthening group ties and collective memory - it could also refer to a common tradition or perspective. All of these behaviors may have occurred on the sites described. They resulted in the objects discovered, which according to post-processual theory, are active participants of people's lives, and their fate is intertwined with the life of the communities that produce them[37].

Conclusions

From the perspective of Neolithic and Early Bronze Age research, the area of northeastern Poland appears as a *terra incognita*. Nevertheless, recent studies have shown that this region is crucial for understanding the process of Neolithization of continental Europe. However, there is still insufficient data in this regard, not only in terms of new discoveries, but also of old materials, which in many cases when reanalyzed can provide a new spectrum of information as with the sites presented here. The application of post-processual concepts revealed the presence of structured behavior related to the deposition of objects at sites no. 3 and no. 6 in Suprasl, X in Ząbie and possibly also II in Szestno. This is particularly evident in the case of sites no. 3 and no. 6 in Suprasl, where sets of unusual items were found deposited inside five features. Despite their unique character, these assemblages also had different states of preservation likely related to their intentional fragmentation. Although the symbolic meaning of these relics is unclear, they may have been associated with group reliving events through commensality rituals and feasts. Their purpose could have been to integrate the community and cultivate group memory. Although discussions in this regard

may be considered rather daring, the data suggest that it may have been new behaviors previously unknown in region of the Neman cultural sphere that influenced the social transformations of the Late Neolithic period.

Endnotes:

1 For instance, Okulicz 1973.
2 For instance, Stankiewicz and Wawrusiewicz 2011; Wawrusiewicz et al. 2015; Wawrusiewicz et al. 2017.
3 See Manasterski 2009; 2016; Wawrusiewicz et al. 2015; Manasterski et al. 2020a,b.
4 Manasterski 2009; Wawrusiewicz et al. 2015 ; Manasterski et al. 2020.
5 Richards and Thomas 1984.
6 Including from Hodder 2007, 201; Brudenell and Cooper 2008; Garrow 2012.
7 Richards and Thomas 1984, 191.
8 Sherratt 1987; Dietler 1990, 1996; Garrido-Pena 1997; Guerra-Doce 2006; Garrido-Pena et al. 2011.
9 For instance Chapman 2000a,b; Chapman and Gaydarska 2007; Larsson 2009.
10 For instance, Hodder 1982, 2012; Kopytoff 1986; Renfrew 1994.
11 For instance Manasterski 2009; Wawrusiewicz et al. 2015; Manasterski et al. 2020a,b.
12 Wawrusiewicz et al. 2015; Manasterski et al. 2020b.
13 Manasterski et al. 2020b.
14 Wawrusiewicz et al. 2015, 29–89.
15 Manasterski et al. 2020a.
16 Manasterski et al. 2020a.
17 Manasterski 2009, 21–28.
18 Pośpieszny 2015; Manasterski 2009, 133.
19 Manasterski 2009, 28.
20 Manasterski 2009.
21 For instance Manasterski 2016, 19–21.
22 Wawrusiewicz et al. 2015; Manasterski et al. 2020a, fig. 4–7.
23 Kopytoff 1986.
24 Courel et al. 2020, 12.
25 Kałużna-Czaplińska and Rosiak 2015; Rosiak and Kałużna-Czaplińska 2017.
26 Sherratt 1987; Garrido-Pena 1997; Guerra-Doce 2016; Garrido-Pena et al. 2011.
27 Champan and Gaydarska 2007, chapter I.
28 See Dietler 1990, 1996.
29 See Manasterski 2016.
30 Champan and Gaydarska 2007, chapter I.
31 van der Veen 2010.
32 Champan and Gaydarska 2007, chapter I.
33 Chapman and Gaydarska 2007, 9–10.
34 Chapman and Gaydarska 2007, 9.
35 Chapman and Gaydarska 2007, 9.
36 Chapman and Gaydarska 2007, 9.
37 Hodder 1982, 2012.

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Imitations and Alterations: Numismatic Evidence of the Relationship between the Varangian-Rus and the Khazars

Konrad Bennett Hughes

Several avenues of investigation must be applied to better understand the relationship between the multicultural merchants and mercenaries identified as the Rus, or Varangians, and the Khazar Khaganate during the ninth century CE. Silver dirham coins, minted by the Abbasid Caliphate and imitated by others, were the lifeblood of trade between the Baltic and Black Sea regions. This exchange of silver coins for chiefly slaves and furs was facilitated by both far traveling Jewish merchants and the earliest Rus, who had Scandinavia, Slavic, Baltic, and Finno-Ugric ethnic and linguistic origins. Numismatic and archaeological evidence points to increasing influences between the Baltic Sea region and the East, especially in trade emporia, during the ninth and tenth centuries. With this trade, by the end of the ninth century the earliest Rus' dynasty, now known as the Rurikids, was able to expand its power to the trading center of Bulgar, modern Kazan in Russia at the edge of the Khazar Khaganate. By adapting the iconic imagery of the Khazar ruling dynasty, the tamga, into Rus' symbolism, the bident and trident "sign of Rurik," the early Rus' solidified their ruler over formerly vassalized groups by the Khazar Khaganate in the tenth century when the steppe khaganate began to wane in power. By following the story told by imitated and altered coins, the influences on the earliest Varangian-Rus culture become more evident.

Introduction:

In the early ninth century CE, a host of merchant cadres, made up of Svear, Gotlander, Baltic, Slavic, and Finno-Ugric peoples, traveled down the rivers of modern Russia and Ukraine, including the Dnieper, Don, Volga, and Kama Rivers.[1] During their voyages, these Varangian-Rus traders encountered a plethora of peoples, ideas, and lucrative trade goods. Most significant among the latter to the Varangian-Rus were the silver *dirham* coins, minted in the Abbasid Caliphate, or imitated by the rulers of Volga Bulgaria, Transoxiana, and Khazaria.[2] Only by examining the numismatic evidence from this era of history, in conjunction with the textual evidence, can we formulate a clearer picture of the relationship between the early Varangian-Rus and the Khazar Khaganate during the ninth century.

Calling of the Varangians

With the "Calling of the Varangians" episode (860 CE) in the *Russian Primary Chronicle,* scholars have proposed a *terminus post quem* for dating the instalment of the Rus' Rurikid Dynasty. The text alone does not prove this point, though, as it was written hundreds of years after (twelfth to fourteenth century) and clearly shows itself to be dynastic propaganda. However, the archaeological evidence corroborates this event. The proliferation of the "sign of Rurik," a bird-like bident or trident graffitied on coins and stamped into seals, shows a symbolic shift within the communities from across Eastern Europe and modern Russia after 860 CE.

Though scholars have some issues with the veracity of the dynastic tales told within the *Russian Primary Chronicle*, it is still the only near-contemporary written source which speaks in detail about the activities of Rurik and his successors, the Rurikids. After establishing that the Varangians had imposed tribute on "the Chuds, the Slavs, the Merians, the Ves', and the Krivichians" (859) but were driven "back beyond the sea", the *Russian Primary Chronicle*'s entry for the years 860-862 states:

There was no law among them, but tribe rose against tribe…they began to war one against another. They said to themselves, "Let us seek a prince who may rule us and judge us according to the Law." They accordingly went overseas to the Varangian Russes: these particular Varangians were known as Russes, just as some are called Swedes, and others Normans, English, and Gotlanders… they said to the people of Rus', "Our land is great and rich, but there is no order in it. Come to rule and reign over us."[3]

The account goes on to explain that Rurik and his two younger brothers established themselves as rulers and brought order to the lands. This account is highly aggrandized in order to ascertain the Rurikid Dynasty as coming from Scandinavia to rule over the tumultuous Slavic lands.[4] It clearly indicates that the ruling house came from Scandinavia, that they were distinct from other eastern Scandinavians, and that they established a dynasty in Northern Russia with Rurik taking his residence in Novgorod. To establish the validity of this change in dynastic rule, scholars must turn to archaeology.

The Khazar Khaganate

As trade in silver and furs greatly increased in the ninth century, so did the sphere of influence of the Khazar Khaganate, who in the eighth century took advantage of the power struggle between the Umayyads and Abbasids in the Islamic Caliphate to expand their hegemony over other peoples, both north into the forest zones of modern Russia and Ukraine, and south into the Caucasus Mountains and Crimea. Khazar influence reached its peak in the mid-ninth century creating a *pax nomadica* which allowed this trade to flourish. Around 831 CE, the Khazar Khagan, or the *Beq*, the secondary military ruler, asked the Byzantine Emperor Theophilos to send him Greek stone masons to construct a new fortress to be named Sarkel, located on the Don River, which

connects the Volga River system to the Black Sea.[5] This kind of large stone fortress building is not the norm for Turkic nomad groups, who were certainly influenced by Iranian, Arabic, and Byzantine practices. Its construction shows the importance of the burgeoning trade networks flowing up and down the waterways.

To address the relationship between the Rus and Khazars in the ninth century, we must turn to the *Annales Bertiniani,* a Latin account of the East Frankish court of Louis the Pious. In 839, a group of travelers arrived at the court with the Byzantine envoy, who claimed (*id est gentem suam)* their "whole people" were called the *Rhos.* These accompanying *Rhos* also "claimed" to be on an official mission of friendship from their ruler, who is titled *chacanus,* Latinized khagan. The *Rhos* had travelled with the Byzantine embassy from Constantinople to avoid a perilous journey back to their homeland, likely an encroaching Pecheneg horde. The Byzantine Emperor Theophilos was invested in these *Rhos*' continued journey, as he made the request for their passage in his letter to Louis. However, Louis did not believe them to be truthful, as they "belonged to the people of the Swedes" (*comperit eos gentis esse Sueonum*), so they were detained until word could come back from Constantinople.[6] From this entry, it is clear that the *Rhos* mentioned had ties to both Scandinavia and steppe nomad cultures, though what those connections were remains in question.

Some scholars have used this passage of the *Annales* to try to prove that there was a Rus' Khaganate centered around the Lake Ladoga region of Northern Russia. However, the archaeological evidence does not support this claim, as the Norse presence in the settlement at Staraya Ladoga was still small at this point, with a larger Slavic and Finno-Ugric population in the hinterlands. This, and evidence of other Slavic groups along the river systems where the early Rus are said to have inhabited, led many Russian and Soviet scholars to believe that the Rus were unadulterated Slavic people.

The debate between these two sides of Rus ethnogenesis is called the "Normanist Controversy." I, along with other scholars such as Marika Mägi, argue that the origins of the Rus lie within a plethora of peoples, though.[7] The *Rhos* at Ingelheim's khagan was not likely of the Rus people, but a steppe nomad overlord to the groups of Slavic, Scandinavian, and Finno-Ugric merchants and settlers who moved into their sphere of influence, some of whom made up the group we identify as the Rus.[8] This brings me to believe that Khagan of the Khazars is the most likely candidate for the *chacanus* mentioned in the *Annales Bertiniani*.[9]

Imitations and Alterations

The ninth and tenth century trade routes running through Eastern Europe were not a novel development as the same trade routes which brought Baltic amber to the Mycenaean Greeks in the Bronze Age facilitated the movements of goods throughout antiquity. However, the ninth and tenth centuries CE are a time of increased activity in this region as the northernmost end of the Silk Roads ended on the shores of the Black Sea in the Khazar Khaganate. After the collapse of the Hunnic steppe confederation in the sixth century, Gothic and other Germanic warriors returned or resettled in the Baltic Sea region. Not only do their epic histories, such as the works of Saxo Grammaticus, confirm this, but so do their artistic styles, such as the crossbow type fibulae of the Gothic armies of the fifth century, which continued to influence styles all over the Baltic and Scandinavia during the Vendel Period (550-790).[10] These Gothic connections to Sweden do not end here though, as scholars such as Tore Gannholm, Line Bjerg, John H. Lind, and Soren M. Sindbaek have all written extensively on the continued trade relations between the Danube Basin and the Crimean Goths with Gotlanders. These were a distinct group of Baltic Scandinavians, separate from the Danes, Normans, or Svear who lived on the island of Gotland and the southern tip of modern Sweden, Scania.[11] It is in the late
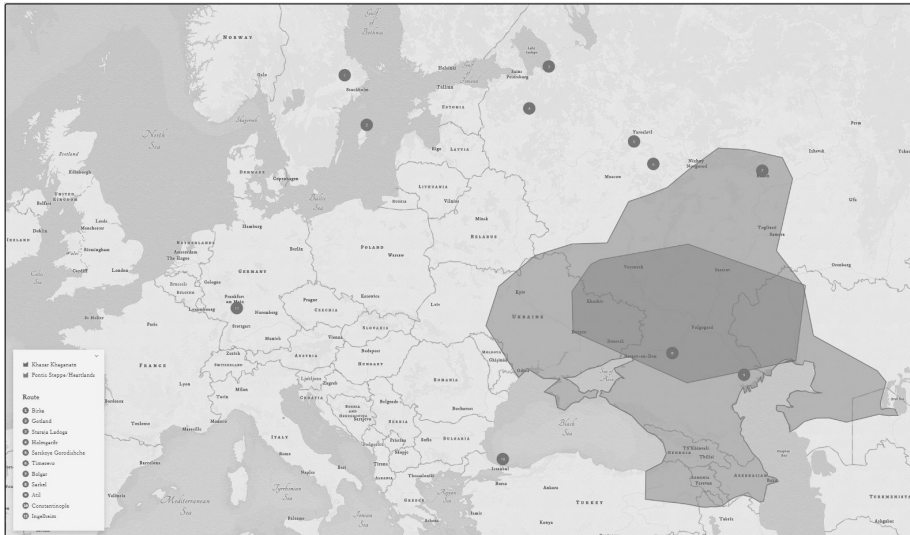
Figure 1: Map of Khazar Khaganate and the significant sites mentioned in this article. Made by Author with Arc GIS Storymaps.

eighth and early ninth century that the trade network between the Abbasid Caliphate and the Khazars began to increase greatly. As the Islamic *dirhams* found their way further north in greater quantities, the Varangian-Rus merchants' interest in these silver coins increased. The Khazars used this established form of coinage to create their own imitation *dirhams*.

The imitation *dirhams* certainly did not go unnoticed either, as the tenth century Muslim geographer and diplomat Ibn Fadlan notes, "In Khwarazm [a city in the southern part of Transoxiana], the *dirhams* are adulterated and should not be accepted, because they are made of lead and brass."[12] Finds from the island of Gotland and Uppåkra in Scania, show imitations made by the Khazar Khaganate as nearly identical to their Abbasid-made contemporaries, except for a few very specific changes. Most of the Khazarian imitations from the late eighth and early ninth centuries have unaltered Arabic inscriptions, with some of them adding a *tamga* beneath the script. The use of this twig-like clan or family mark is usually associated in the eighth through tenth centuries with the Saltovo-Majaki

culture of the Khazar Khaganate, though it had significance with earlier Iranian groups, as well as with later Turkic and Mongolic speaking peoples.[13] The *tamga*'s shape is also important as it resembles the early Rus' rulers', the Rurikids, dynastic symbols, the bident and trident, linking the iconography of the Khazar Khaganate to the earliest Rus' state.[14] Along with the early Rus' use of the title khagan for their rulers in both Arabic and Frankish sources, the connections between the ninth century Rus and the Khazars is undeniable though uncertain in nature.

By 837/8 CE, Khazar *dirhams* had altered a great deal more. Their imitations took on a political and religious context of their own as the Khazars replaced the Caliphate's writing with their own text, *"Ard al-Khazar"* [Land of the Khazars] and the Islamic creed with *"Musa rasul Allah"* [Moses is the Messenger of God].[15] Moses being the foremost figure of the Jewish faith, these coins help archaeologists and historians to better identify when the conversion of a portion of the Khazar court took place, sometime in the late eighth or early ninth century, before 837/8 when these

coins were minted. This was not a wholesale conversion of the Khazar population and their tributary states though. Many kept their shamanistic Tengrism beliefs, and it is more likely that only a section of the nobility led by *Beq* Obidiah converted to Judaism due to heightened contacts with Jewish Radhanite merchants as well as migrants from the Byzantine Empire in the eighth century.[16] It is possible that this conversion was not a bloodless affair as Magyar and Iranian Qabar elements of the Khazar Khaganate migrated to the west during this period, possibly in a political revolt or caused by pressure from the encroaching Pecheneg horde from the east.[17] All of these factors created uncertainty in the Ponto-Caspian Steppe that the ninth century Rus took advantage of.

There are three intriguing *dirham* finds of unknown origin held in the Chernihiv Regional Art Museum in Ukraine. Two of these *dirhams* have bidents graffitied on them while the third has a trident. In his work *The Viking Rus*, Wladyslaw Duczko attempts to connect the "sign of Rurik" with different prevalent symbols of the region, but does not come to a conclusion as to these assessments.[18] However, he does include an evaluation of possible interpretations, stating "by being included among the other objects executed as graffiti on the coins—swords, standards, hammers of Thor, spears, battle knives, and sign of Rurik—we have to assume that even the forked arrowhead had, like the previously mentioned items, symbolic content."[19] The similarity between the *tamga* and the bident and trident symbols of the Rurikid Dynasty might be a coincidence; however, since both symbols were in use in the same regions of Eastern Europe it is possible that the iconography in use by the Khazars was coopted by the early Rus to better establish their control over the groups who were once part of the Khazarian Khaganate or aware of their dynastic symbol.

The earliest dated evidence of the "sign of Rurik" comes from graffitied coins. An Islamic *dirham* minted in Basra, Iraq, in 877/78, which was deposited in Gotland, Sweden, between 880–885, is the earliest example of the use of the bident version of this dynastic sign.[20] The coin is of a typical type from the Islamic Caliphate but has a crude bident scratched into its surface. Three sides of a square with a small triangle on the connecting piece are etched into the metal. This bird-like bident resembles a number of other finds from Estonia and Sweden, which have a much more bird-like appearance to them. A *dirham* fragment deposited after 903/902 in Pogorelshchina, Belarus displays images scratched upon both sides of the coin. On one side is the bident, looking very bird-like, while the other side shows a standard.[21] This combined imagery harkens to references made to the standard of Odin which is depicted as having a raven on it in the 878 CE entry for the *Anglo-Saxon Chronicle*, possibly pointing to the "sign of Rurik" being used on battle standards before the beginning of the tenth century when this coin was deposited. This numismatic evidence points towards a political shift within the region which coincides with the textual evidence of the arrival of the Rus' Rurikid Dynasty.

From the time of *knyaz* Svyatoslav (d. 972) more official signs of the Rurikids appear in the material evidence, showing the continued use and standardization of this symbol.[22] A seal found at Kiev[23] depicts a very bird-like bident surrounded by quasi-Greek letters and even incorporating a cross at the top of one side. The bident clearly shows Svyatoslav's connections to the Rurikid Dynasty with its shared symbolism to the earlier coin finds, while the quasi-Greek letters point towards his military inclination to conquer southwards from Kiev. The final interesting element on the seal, the cross, possibly identifies Svyatoslav's mother Olga's influence on courtly dynastic decisions.[24] Svyatoslav ruled more as a khagan, traveling from region to region to suppress his tributaries and conquer new lands, while his mother took care of the day-to-day politics. Perhaps, this seal was her, not his, official way to stamp documents

which she approved of with her sign of faith, while also displaying the steppe nomad influence in the bident.

The proliferation of the bident symbol in archaeology allows us to determine that the events described in the *Russian Primary Chronicle* have at least some validity. A group of conquerors, using the bident symbol, with ties to Scandinavia, moved down the rivers of Russia, mingling with local groups, before establishing themselves at Kiev. They traded with Slavs and Scandinavians extensively, as the evidence of graffitied coins shows. Then, when they were well established, they began to construct a dynastic image based off the graffiti they scratched onto the *dirhams* they traded with. This imagery was incorporated into their official seals and symbology. Though there is not the time to discuss further incorporations of the bident signs in early Rus' symbolism here, the evidence is clear that the bird-like bident was the progenitor of the bird symbolism within Russian art and iconography used in later centuries.

Another element to some of the Islamic and Khazar *dirhams* are holes drilled to attach a bail to make a pendant. The Swedish site of Birka grave 632 of the Svear culture, likely dating from the late ninth or early tenth century, has revealed a number of coins together as "a series of pendants, most of which had been imported from abroad. These pendants originated in England, Khazaria, Byzantium, the Islamic world and the Carolingian empire, thus representing a microcosm of the Viking sphere of contacts."[25] This and other archaeological evidence indicate that these *dirhams* became a symbol of elite power for the early Rus, wearing not only their wealth but the very items which made them wealthy altered into jewelry. This connection between *dirhams* and elite power placed alongside the evidence of the *tamga* and "sign of Rurik" upon these same coins, is not a coincidence. The power that these high-quality silver coins brought to Scandinavia spread from the east, up the rivers of Russia in the hands

of traders first, cultivating an elite group which then invaded and migrated into those same lands where the *dirhams* were once traded .

So, the question becomes, what were the Rus traders offering in return for the *dirhams* to the Bulghars and Khazars who served as intermediaries between them and the Caliphate? Slaves were certainly a part of this trade, but it is impossible to know how large of a part they played as archaeological evidence of ancient and medieval slavery can be difficult to identify. However, Arabic sources do confirm that *Saqāliba* slaves of pale complexion were highly valued.[26] What scholars have confidently identified is the presence of trading for pelts between the groups. Like the Canadian fur-trappers and voyageurs of the seventeenth and eighteenth centuries, the Finno-Ugric tribes and Rus merchants brought an astonishing amount of fox, beaver, martin, and sable pelts south to feed the fur frenzy which took place in Baghdad during the ninth and tenth centuries.[27] Ibn Fadlan notes the value of pelts several times, while another Arabic writer, Al-Masudi, says in his work *Muruj adh-Dhahab*,

> Arab and Persian kings take pride in their black furs, which they value more highly than those of sable-martens, and other similar beasts. The kings have hats, kaftans and fur coats made of them, and it is impossible for a king not to possess a caftan or a fur coat lined with these black *burtasi (foxes)*.[28]

Arab writers are not alone in noting the popularity of this commodity, as the eleventh century Frankish ecclesiast Adam of Bremen in describing a Baltic tribe from *Semland* says,

> They have an abundance of strange furs, the odour of which has inoculated our world with the deadly poison of pride. But these furs they regard, indeed, as dung, to our shame, I believe, for rightly or wrongly we

hanker after a marten skin robe as much as for supreme happiness. Therefore, they offer their very precious marten furs for the woollen garments called *faldones*.[29]

From these sources, we can clearly see that fur pelts were a shared currency, along with the silver *dirhams*, for many peoples, as the late ninth-century Old English account of Ohthere's travels in the North Sea also shows that marten pelts were used as common tribute from the Finnas people.[30] Distribution of the *dirhams* and these same fur trade routes directly coincide across Eastern and Northern Europe.

The east coast of Sweden, particularly the island of Gotland, shows the greatest concentration of *dirhams*. According to Tore Gannholm of the University of Uppsala, the proliferation of *dirhams* found on Gotland is not the only close connection between Gotland and the East, as he and many other scholars believe that there was a trade agreement signed between Gotlanders and Byzantine Emperor Leo VI in the early tenth century, as well as the Byzantine royal house having both Gotlander and Khazar ancestors.[31] At least thirty-nine Runestones spread across Scandinavia attest to Norsemen travelling to Byzantium,[32] while both Rus' Chronicles and Scandinavian Sagas place enormous significance upon the "Great City," *Miklagard,* which was the Old Norse term for Constantinople.[33] Mercenary service to rich foreign rulers helped to propel the far-flung adventures of the Scandinavians in a unique way, inspiring generations of skalds in the ninth and tenth centuries.[34] Though the mid-twentieth century scholar J. Brutzkus' theory that the Rus were mercenaries for the Khazar Khaganate in the ninth century has found little evidence to support it directly, it certainly fits the form for these silver seeking Norsemen who traveled armed to trade in far-off lands.[35]

While many Russian scholars, relying on the *Russian Primary Chronicle*,[36] have made the Rus out to be bodyguards and strong arms, a "retainer culture" for their Slavic counterparts, many Scandinavian scholars have attempted to use the Islamic source material to refute this claim.[37] Typically, these Islamic sources can be relied upon to be far more reliable. One of the earliest of these accounts is that of the Arab geographer Ibn Rusta, who wrote from 903–913, but heavily relied upon an earlier unavailable source from the mid-ninth century. Within a longer description of their marshy island homeland and customs of trading and raiding, he states that the Rus have a king they call "Khagan Rus."[38] Ibn Khurdadbeh in his *Book of Roads and Kingdoms* from the late 840s mentions a group called the "ar-Rus" who are part of the "as-Saqaliba" which is generally considered the Slavs in later accounts, but here simply means pale skinned. These "ar-Rus" levee tithes from other pale skinned tribes and trade furs with the Khazar Khaganate in their city of Itil, and "on occasion they bring their merchandise on camels from Gujan to Baghdad" where they claim to be Christians to avoid heavier taxation.[39] These two accounts, and other later sources, greatly help to illustrate the culture which was behind the *Rhos* at Ingelheim as well as the Varangians who are "called" to bring order to the land in the *Russian Primary Chronicle*.

Conclusion

From the textual, numismatic, and archaeological evidence available about the relationship between the Varangian-Rus and the Khazars, we can conclude that the Rurikid dynasty used the *dirhams* brought by long distance trade, not only to make themselves wealthy but also possibly helping establish their dynastic iconography by coopting the *tamga* symbol either directly or indirectly to establish their power in the region north of the Khazar Khaganate in the late-ninth century. However, the emergence of this cross-cultural connection between these Norse-Slavic and Turkic speaking peoples had already begun in the preceding half century, as both Frankish and Arabic sources corroborate the Rus' use of the title

khagan from the early-ninth century. Though there is not enough evidence to prove that the Rurikids intentionally and directly took their iconography from the Khazars, the coincidences are too great to ignore. By incorporating more interdisciplinary methods of study scholars can begin to lift the grey fog which hangs over the early middle ages and determine the extent of the influences between cultures through trade.

Endnotes:

1 Gannholm 2013, 179; Mägi 2018, 212.
2 Noonan 1998, 209.
3 Nestor 1953, 59.
4 Duczko 2004, 78–79.
5 Golden 2007, 155, 159.
6 Duczko 2004, 17–19.
7 Magi 2018, 198–199.
8 Androŝuk 2013, 59.
9 Duczko 2004, 24–28.
10 Bliujiene 2011, 29–31.
11 Bjerg 2013, 7, 241.
12 Faḍlān 2017, 54.
13 Duczko 2004, 236.
14 Hedenstierna-Jonson 2009, 172.
15 Golden 2007, 156.
16 Gannholm 2015, 28; Preiser-Kapeller 2016, 3.
17 Golden 2007, 155; Ивик 2013.
18 Duczko 2004, 235.
19 Duczko 2004, 237.
20 Hedenstierna-Jonson 2009, 171.
21 Duczko 2004, 230.
22 Hedenstierna-Jonson 2009, 171.
23 Found at the site of the Tithe Church in the oldest layer below the church's foundations. See Duczko 2004, 230-231.
24 Duczko 2004, 231.
25 Audy 2018, 174.
26 Magi 2018, 200.
27 Kovalev 2001, 26–28.
28 Kovalev 2001, 26; Noonan 1998, 154.
29 Magi 2018, 150.
30 Orosius 1984, 20.
31 Gannholm 2013, 200.
32 Olausson 2009, 145.
33 Androŝuk 2016, 5.
34 Androŝuk 2016, 345.
35 Brutzkus 1944, 120.
36 Nestor 1953.
37 Hansson 1997, 11, 53.
38 Duczko 2004, 32; Macartney 1930, Appendix A.
39 Duczko 2004, 22.

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Experimental Studies in the Field of Ballistics on Different Types of Arrow Shafts

Maciej Sadło

The invention of metallurgy improved the manufacture of arrow shafts made from split wood; however, it is likely that before this innovation this process relied mainly on stems from trees and shrubs. In Europe, the species employed in shaft manufacture included willow, hazel, dogwood, and viburnum. The goal of the study presented here was to examine how wood type influences arrow flight trajectory. Towards this aim, an experiment was carried out in 2019 using replicas of bows modeled on prehistoric finds from Europe, namely the Bolków and the Holmegaard bows. This article presents the results of this ballistic research, showing possible differences in the use of different species of trees and shrubs.

Introduction

In Europe, interest in archery emerged around the mid-nineteenth century as a result of the then popular image of the "noble savage" and the "fashion for history" in Victorian England, when the bow was a toy for the elite[1]. The development of science drove scholars to look at this tool as an object that could be studied, and at archery as an issue that could be analyzed from various perspectives[2]. Scientific research on this subject dates back to the beginning of the twentieth century and has continued to this day. Early research often focused on evaluating the effectiveness of bows and, above all, the ballistic coefficient of arrows. An example of such work can be found in studies of shooting trials published in 1918, which used bows and projectiles from different eras and cultures around the world[3]. Another common type of research was the reconstruction of ancient bows and arrows based on finds from archaeological sites. This made it possible to compare bows from different times periods and regions, therefore informing us about the way they may have been used in the past.

However, so far, experimental archaeology has mainly focused on the study of projectile point function, especially in terms of microscopic evidence of damage caused by shooting[4]. This focus naturally arose from the fact that the most frequently recovered archery pieces in archaeological contexts are arrowheads. Made of durable materials, such as stone, flint[5], bone[6], or metal[7], arrowheads tend to be the better-preserved part of an arrow. This fact has had a key impact on the study of ballistics of prehistoric arrows. Yet, the organic elements that constitute the rest of the arrow are also important when trying to achieve the perfect shot. Still, this has rarely been studied, probably due to the scarce reference-base available. Indeed, organic elements are preserved only in specific environmental contexts, and only a few of these, such as bogs or glaciers, allow them to survive for many hundreds of years. Therefore, the number of complete arrows recovered to date is limited. This lack is reflected in the literature, where studies devoted to the preservation and influence of the arrow shaft on flight trajectory are absent. Only a few prehistoric sites where preserved arrow shafts were found are known in Europe. These include Stellmoore in northern Germany[8], Similaun in the Ötztal Alps[9], and Langfonne in Norway[10]. At these sites, the use of several tree species for shaft production has been recorded. Among them were dogwood, viburnum, hazel, and pine.

In 2019, the archaeological experiment discussed here was conducted to verify and interpret data on the effectiveness of using arrows with shafts made from the above-mentioned species. To achieve the study's goals, the following steps were undertaken: the acquisition of raw material, the manufacture of arrows, and experimental shooting sessions. The aim of this experiment was to produce arrows with shafts made from various plant species while using arrowheads inspired by material known from Late Neolithic/Eneolithic sites co-researched by the author. The focus was solely on plant-firing arrows, since an accurate replication of the process of making split-wood arrows would require the production of prehistoric metal tools. The author realizes that it is possible to produce prehistoric arrows without the use of metal, but this is beyond his possibilities. This experimental project made it possible to check the ballistic properties of particular tree and shrub species, the influence of these shafts on the arrows' flight trajectory, the significance of wind pressure on shooting, as well as the effective distance between the shooter and the target. The steps of this study were documented photographically and descriptively.

Materials and Methods

The experiment was divided into two phases: (1) manufacturing and (2) shooting, for which the reconstructive, experimental, and comparative methods were adopted as the methodological basis. During the first phase, shoots of different types of

plants were subjected to treatment aimed at eliminating defective material. The use of various types of shafts made it possible to analyze their properties in terms of quality of the raw material and labor intensity of the workmanship. The weight of each arrow was compared, and a record was kept of the individual components (arrowhead, fletchings, and shaft) that could affect the arrow's flight trajectory. A DIGILAB TRADING JKH-4000 electronic scale was used for this purpose. The arrows were grouped according to weight and plant species, and given serial numbers. The dogwood (*Cornus mas* L.) arrows weighed from 31 to 39 g. and were divided into three weight groups each with five arrows. The viburnum (*Viburnum opulus* L.) arrows weighed from 27 to 31 g. and, like the dogwood arrows, were divided into three groups, each with five pieces. There were also 10 arrows of hazel (*Corylus* L.). They weighed from 25 to 32 g. They were divided into two groups of five pieces each. Due to the small representation of willow arrows, it was decided to leave them in one group. They weighed from 23 to 28 g, and their number was six. Also the tension of the bows was measured, after which test shooting sessions were conducted to check their efficiency. In addition to combining different arrows and bows during the

shooting phase, distance variation was introduced to test the effectiveness of each arrow under specific conditions.

Two straight bows made by an external qualified person and modeled after finds from sites in Bolków and Holmegaard were used during the experiment. They both represented different types from various periods, which, in the author's opinion, helped to indicate potential differences between shafts. While the structures of the bows were reconstructed in reference to the finds, it was impossible to reproduce bowstrings as the originals were not even fragmentarily preserved in archaeological contexts. Therefore, the bowstrings used were made after the English longbow model[11], and linen chords were applied. Arrowhead shapes were modeled after the Late Neolithic materials from Poland coming from sites in Suchacz (Rzucewo type)[12] and Supraśl (Bell Beaker type)[13], which appear to the author as very unique and flexible for such an experiment. The shafts were made from the following plant species whose presence was confirmed in the archaeological record: dogwood[14], viburnum[15], hazel[16], and willow[17]. For reference analyses, the day before and on the day of the main research, a comparison shooting session with replicas of medieval

Figure 1: Replica bows from Holmegaard and Bolków.

Figure 2: Examination of the maximum range (moment of the shot from the replica bow from Bolków).

bows with split arrows was conducted. As a result, it was possible to measure the maximum range for both bows (around 150 m) and the dispersion zone of arrows at the target (between 1.5 m. wide by 3 m. deep). This experiment showed a high degree of repeatability of the archer (shooting repeatability), which seemed to prevent the potential risk of data manipulation related to shooter fatigue. The experiment was carried out respecting all research principles, as well as the methodological limitations arising from the problem of reproducing prehistoric phenomena.

Experiment

The experiment consisted of two phases: manufacturing and shooting. The first lasted from late February 2019 to mid-October 2019, while the second was conducted over two days in early November 2019. While the arrows were prepared in-house and following the model of Ötzi's arrows[19] (with minor change applied to the individual components)–in some pieces a horizontal fletching system was introduced instead of a radial one–the bows were commissioned from a professional bow-maker, who made them according to the models coming from sites in Bolków and Holmegaard[20]. The

Figure 3: Skin of a calf spread on a target.

manufacture of the stems began with a search for suitable plants (shrubs and trees), and the gathering of stems. These included: dogwood, viburnum, hazel, and willow. Due to seasonal variations affecting the structure and physical properties of each species differently, the material was obtained both at the end of February and the beginning of March, and also several months later–in June and September. The periods of material acquisition were related to the cycle of plant growth, which affects the parameters of the collected raw material due to the plants growth on the diameter–during these periods they display ideal qualities due to nutrient storage. Stems that were approximately two years old were obtained due to the need for a slight stiffening which occurs through the wooding process. The material was obtained from forests near Stężyca, Rycki County, Lubelskie Voivodeship, Poland. All analyses were carried out by the author of the article, an archer with several years of experience. In the case of the shooting phase, the assistance of an archer with additional experience was also sought to measure shot repeatability and shot range.

Manufacturing Phase

The preparation of the arrow shaft was divided into five phases: (1) pre-treatment of the shafts, (2) drying, (3) straightening, (4) grinding, removal of protrusions, and trimming to the appropriate length, and (5) preparation of the nock and pocket for the arrowhead. In the first phase, the stems were cut in such a way that the drying process would not prevent further length correction. In the second phase, the prepared stems were debarked and dried (for ten days in total) in conditions with continuous air flow. In the third phase, the main straightening (using the most effective high temperature treatment) took place after the material had been seasoned. It helped to prevent all rapid returns of shafts to their original curved form or even their splitting. The arrows were straightened by heating them directly over a fire (leaving characteristic tanning marks), as well as indirectly, by placing the shafts by
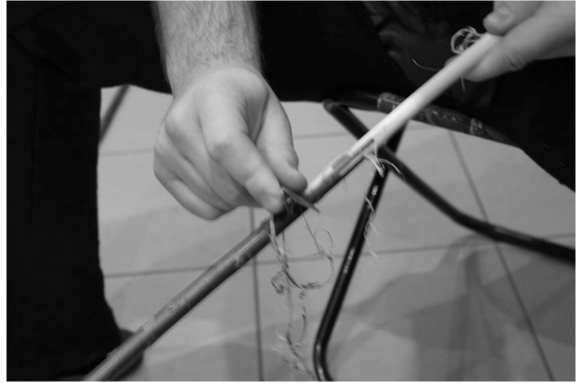

Figure 4: Removal of bark from a fresh shoot (note the long, easily descending strands of bark).

the fire on a structure built for this purpose[21]. In the fourth phase, grinding was carried out using pieces of red and white sandstone specially prepared for this experiment. Removal of protrusions was carried out by cutting off the excess material with the edge of a flint chip, followed by grinding on abrasive stone slabs. In the fifth phase, the natural thickening on harvested stems was used for the nock and the arrowhead's pocket. The tip of the arrow shaft was flattened to about 1 cm by cutting excess material using a flint chip and grinding on sandstone. This was accomplished to reduce the contact area between the bowstring and the arrow, while at the same time properly shaping the nock. Flint arrowheads were mounted onto the prepared shafts using a binder made of pine resin mixed with charcoal to make them more flexible. Feathers of wild ducks and geese were used as fletching by attaching them to the shaft with linen fiber wrapping. Fletchings were set up in the manner of those discovered on Ötzi, changing only the radial to horizontal arrangement due to resource constraints[22]. The fletchings of wild duck and wild goose feathers were selected for their good flight properties[23]. Linen wrap was used to strengthen critical parts of the arrow such as the nock and the arrowhead's pocket[24]. During the manufacture of the shafts, longitudinal cracking of their structure was often observed, especially when shaping the

arrowhead's pocket[24]. Thus, it was decided to reinforce both ends of the shaft with linen wraps secured with bone glue.

Shooting phase

The shooting phase of the experiment took place in November 2019 in Żmijowiska, Wilków commune, Lubelskie voivodeship, within meadows near the reconstruction of an early medieval stronghold. This location now functions as an archeological field base belonging for the Nadwiślańskie Museum in Kazimierz Dolny, Grodzisko-Żmijowiska Department. The site was chosen for two reasons: on the one hand, because of the cooperation the author of the experiment had with the museum, and on the other, because of its good terrain properties - its location being far from human settlements and the lack of vegetation allowing good visibility.

The period of the shooting was chosen at a time when the experimental site is no longer visited by tourists, and days with favorable weather conditions were selected. There was light cloud cover (about 40% on November 13, and 60% on November 14). Occasional east and north-east winds of 8 to 12 km/h were recorded. The pressure was 1020 hPa and the temperature fluctuated between 7 and 9 °C. Accurate weather data was obtained from the meteorological station at the military airport in Dęblin for both days.

Figure 5: Dogwood arrows.

The first stage involved testing the ability of two archers of varying experience who each shot 10 arrows in two bursts. These activities were aimed at warming up the muscles, determining the maximum range, and establishing the influence of the weather on arrow flight.

These activities were followed by shooting at a straw target set up on a wooden frame. The aim of the activity was to check the effectiveness, i.e. accuracy and perforation properties, in relation to the distance and type of stem from which the shafts were made. Due to increasing gusts of wind, the shooting was carried out in the area of the nearby field-base belonging to the Museum, where trees and neighboring buildings created a forest-like shelter for the experiment. The shots at the base were fired solely by the research author.

Shots were fired in series from Holmegaard and Bolków bow replicas. A straw disk with a diameter of 1 m was used as a target, first with a paper shooting matrix glued on, and in later tests covered with calf skin with retained hair. At a distance of about 3 m behind the target, an arrow holder made of plastic was placed in order to stop the shots. Shooting was done from to 40 m and 25 m trials; the focus was also put on shooting from a distance of 20 m. Forty meters is considered the maximum at which–according to the Polish Hunting Association[25]—a shooter can, in favorable conditions, approach an animal without scaring it away.

Results

Effects and Results of the Manufacturing Phase:

The first stage of the experiment produced 46 arrows from tree stems. They were categorized according to their total weight, the species from which the shaft was made, and the type of arrowhead mounted. During the manufacture of the arrows, differences in the structure and physical properties
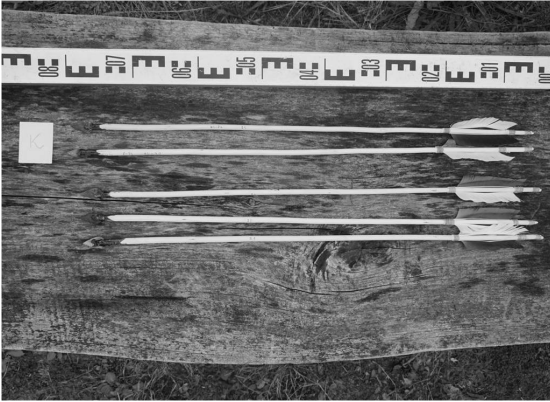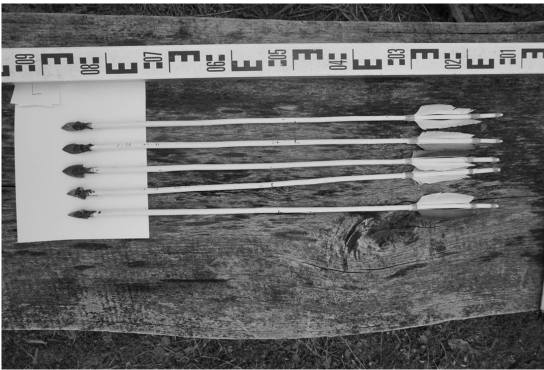
Figure 6: Viburnum arrows.
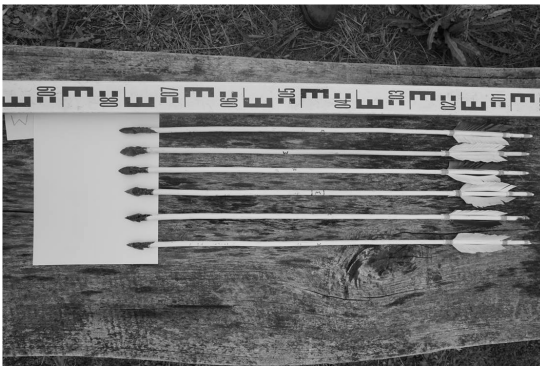

Figure 7: Hazel arrows.

Figure 8: Willow arrows.

of the various stems were noticed, and these differences affected the process of production and the flight properties of the arrows. Stems of the same species (in this case, both viburnum and dogwood) collected at different times of the year behaved the same, both during arrow production and during arrow use. During shoot debarking, it was observed that fresh stems, which were also processed, behaved much better when using the flint tool than stems naturally dried with the bark. Nevertheless, only dried stems were used for the following manufacture and shooting. The time taken to debark such a stem ranged from 10 to 15 min, irrespective of the plant species. The bark came off in the form of long moist "strands", even after pulling once with the edge of the tool. In the case of dried stems (after a minimum of 14 days of drying), the working time increased considerably and significant differences between individual plant species could be observed. The hazel specimens took the longest to debark, and they were ready only after 40–45 minutes. Less time was needed to work with the raw material obtained from willow and dogwood; in their case it was about 25 minutes. The fastest, about 20 minutes, was the debarking of the viburnum. The way the bark came off also varied: dry pieces resembling elongated sawdust fell off, and one place had to be processed many times due to pulling off successive layers of bark. Therefore, it is likely that in the past shoots were debarked fresh, using a flint tool, regardless of wood species, to minimize processing time. Individual stems differed in their physical properties: the stiffest were the dogwood shafts, followed by the viburnum and hazel ones, while the willow stems were the most flexible. A correlation between shaft stiffness and mass existed: thicker shafts were stiffer. Moreover, stiffer shafts were less susceptible to straightening and mechanical processing, such as trimming or cutting. However, during shooting, they had better ballistic properties, such as: keeping the given flight trajectory, better accuracy, and resistance to wind gusts.

Plant Species and Shafts Parameters:

Dogwood (*Cornus mas* L.):

The material is hard and compact, difficult to break, and ideal for arrows despite two defects, one of which disappears during processing: it is heavy and returns to its original shape. Drying eliminated the curving shape of the spar but it had no effect on the weight of the shoot.

Viburnum (*Viburnum opulus* L.):

After initial straightening, the stems held their shape without wiggling. There was a concern during production that they may be too fragile, but the ballistic experiment showed that these arrows worked perfectly with the Bolków bow. Still, they appeared to be lightweight and more brittle than dogwood arrows. With a distinct spongious inside, this wood can be classified as very good shaft material. because pinned tips could be inserted easily. Lastly, it dries much faster than dogwood.

Hazel (*Corylus* L.):

After exchanging experiences with archer fellows from the Polish archery community, the author worried whether hazel shafts would perform well during ballistic research. The concern was about elasticity as one of the fellows claimed that hazel rods were not elastic but rather plastic (they deform, but do not return to their shape). Therefore, the danger was that they may not remain straight. However, not only did the experimental work show that hazel shafts could be shaped well, but instead of revealing "plastic" behavior, shooting results showed that hazel is too elastic by nature. This disturbed the flight trajectory of the arrows even more than potential plasticity. The relationship between hazel wood's mass and elasticity was found to be unbalanced in favor of the latter, which prevented accuracy.

Willow (*Salix* L.):

During the shooting sessions, it became apparent that willow was too light, brittle, and prone to deformation. Its flying behavior was clearly related to the force imparted during firing, which manipulated it in the process. Nevertheless, six such arrows were made for comparison. Due to the fact that this wood produces light arrows, it was perhaps not used for classic hunting but for long distance shots.

Effects and Results of the Shooting Phase:

Even though the willow arrows had the most hits in relation to the number of shots, the shooter found releasing them to require the most effort and the longest aiming. They were shot at the end of the trials, which could bias the results due to the archer gaining "practice" in that particular position and for a particular target[26]. The dogwood and viburnum shaft arrows showed good ballistic properties, achieving 37.5% and 33.3% hits of the target respectively. Hazel arrows performed the worst, which may be due to their excessive flexibility. The replica bow from Bolków was clearly dominant when it came to accuracy, with the dogwood and viburnum arrows achieving very good results (>50% hits). The Holmeggard bow, even when shooting large numbers (>5) of arrows, achieved very poor results or no hits at all, which may be related to a mechanical defect in the bow (weaker lower arm). A similar number of arrows were shot from both bows (28 to 25 in favor of the replica of the bow from Bolków), but accuracy was almost twice as high in the Bolków case. Preparatory shooting with replicas of medieval bows with split wood arrows, conducted the day before and on the day of the tests, showed more precision at the best distance (20m) which was 85 percent (17 hits out of 20). Even at a distance of 40 m, medieval arrows hit the target more often than arrows made from tree stems (12 hits out of 20).

Discussion

The experiment was conducted as designed,

Arrow shaft	Number of shots	Bow type	Number of hits	Number of hits (percent)		
Dogwood	16	Bolków (B) (10) Holmegaard (H) (5)	5 (B) 1 (H)	37.5		
Viburnum	18	H(11) B(7)	2 (H) 4 (B)	33.(3)		
Hazel	13	B(8) H(5)	3(B)	23		
Willow	6	B(2) H(4)	3 (H)	50		
All	53	B(28) H(25)	18	B(12) H(6)	33,9	B(42.8) H(24)

Table 1: Shooting results according to shaft and bow type.

and the results provided data on the characteristics and performance of arrows made from shoots of selected species of trees and shrubs. Although this was not the immediate aim of the study, during the shooting phase it was found that the arrowheads that collided with the tripod of the target made of pine wood repeatedly cut through the wrapping as well as the shafts. It may suggest that despite the stems being reinforced with bone glue, they could also split when hitting the target, especially the hard parts of the animal, such as thicker skin, bones and antlers. This may also serve as indirect evidence that arrows were usually used as a one-shot projectile, since most of the important vital organs of an animal are in the chest chamber, well-protected by the rib cage (as in case of a wild pig or a deer). Hunters usually aim for the chest in order to kill the animals instantly. Nowadays, this is due to hunting ethics and tradition, but in the past this was a necessity. Indeed, a badly hit animal could get away, which forced a long search and sometimes even the loss of the prey[27]. In some communities, however, it was sometimes advisable to injure a large animal first and, while tracking it (persistance hunting strategy), wait for it to die of exhaustion. This is risky, because of the possibility of the animal escaping and the increased probability of attracting predators, also dangerous to the hunters.

It follows that arrows (and especially arrowheads) may not have been reusable especially when used on large preys. The easy availability of the stem material, and its simple and effective processing, seem to support this as well. It should be stated that the stems of the dogwood and viburnum arrows proved to be the best samples in terms of ballistic research. During the shooting sessions, willow and hazel arrows were found to be inadequate, especially their susceptibility to the negative influence of atmospheric conditions. Gusts of wind changed the flight path of the arrows slightly. They were also too elastic in relation to their low mass, which resulted in flight disturbances

The 33.9% overall hit rate with the arrows made from stems may seem quite low. Preparatory shooting with replicas of medieval bows with split wood arrows, conducted the day before and on the day of the tests, showed, at the best distance (20m) about 90% accuracy. Even at a distance of 40 m, about 40% of the arrows hit the target. On this basis, the following reasons for the

poorer accuracy of prehistoric bows and arrows can be deduced:

(1) Stem versus split arrows: the stem structure is a smaller scale reflection of the tree structure with all of its weak points (i.e., irregularities in the grain, curvature, knots). The small scale of such weak points in the stem structure makes the arrow much more difficult to shape by the archer. Even when it can be shaped properly, there still remain some natural defects at the microscopic level that are impossible to correct. Split wood arrows extracted from tree may be much more often reused. As the author observed and discussed with other researchers from the experimental environment, the technique for making them is more advanced, and all potential weak points are much more visible, making it easier to shape the radius properly. The comparison shooting using medieval arrows proved that split arrows made from selected solid wood strips have better ballistic properties than stem arrows.

(2) Difference between bow replicas: the prehistoric bows used in the experiment had low tension and minor design flaws (e.g., weaker lower arm in the case of the Holmegaard bow replica–the lower arm of the bow worked less when shooting).

(3) Prehistoric versus modern shooters: the shooters who carried out the experiment had many years of experience with non-prehistoric bows, but even a few previous practice sessions with replicas of prehistoric bows and arrows could not eliminate some of the archer's reflexes associated with muscle memory (slight forward lean, different hand position, changed bow tension) These were advantageous in the case of modern bows and could prove to be useless or even disadvantageous for replicas of natural bows. By contrast, prehistoric archers only learned to shoot arrows from wooden straight bows, which after many years of training made them professionals in the use of this weapon.

It should also be noted that arrowhead type appeared to have no effect on shooting accuracy. If there was one, it must have been minimal and drowned out by the more influential arrow quality factors mentioned above. Instead, arrowheads appear to have a decidedly decisive effect on arrow penetration.

Conclusions

The study of arrow ballistics has a long tradition. However, experimental archaeologists have focused mainly on the mechanical damage done by arrowheads. Instead, the author of this paper, using evidence from the archaeological records, conducted an experiment testing the properties of arrow shafts made with dogwood, viburnum, hazel, and willow stems. The experiment not only demonstrated the different attributes of the various species of trees and shrubs, but also highlighted a number of difficulties associated with the proper handling of the research process. Hazel, which seemed attractive during the initial planning of the experiment, turned out to be disappointing in terms of effectiveness. Dogwood and viburnum arrows performed much better than the other types despite the relatively high spar weight. Research revealed that willow shafts are not suitable for short range shooting. The course of the experiment has shown how important the role of experimental archaeology is for the whole discipline: in the course of conducting experiments it verified that all tested species recorded in archaeological records are suitable for shooting, however each of them has particular properties. Yet, the experiment is also fraught with a certain degree of error due to the lack of a 100% reproduction of the original conditions that should have been recreated.

Acknowledgments:

Endnotes:

1 Jankowski 2002, 6.
2 Coles 1977, 166–177.
3 Coles 1977, 7.
4 For instance: Barton and Bergman 1982, 237–248; Chesnaux 2008, 134–146; Crombe et al. 200, 253–269; Dmochowski and Pyżewicz 2012, 497–528; Fischer et al. 1984, 19–46; Grimaldi 2008a, 147–160, 2008b, 405–407; Grøn 1992, 9–12; Osipowicz and Nowak 2017.
5 For instance: Oddel i Cowan 1986, 195–212; Rots and Plisson 2014; Osipowicz and Nowak 2017.
6 For instance: Ikäheimo et al. 2004, pp. 3–20; Luik 2006; Zhilin et al. 2014; Zhilin 2016.
7 For instance: Montanari 2015, 74; Riesch 2002.
8 Meadows et al. 2018, 105–114.
9 Brizzi 2005.
10 Pilø et al. 2020.
11 Loades 2013.
12 Januszek 2016, 145–150.
13 Januszek et al. 2019; Manasterski et al 2020.
14 Oeggl 2009, 3; Sunyol 2013, 6.
15 Junkmans et al. 2019, 283–311; Oeggl 2009, 3.
16 Junkmans et al. 2019, 283–311 ; Sunyol 2013, 6.
17 Sunyol 2013, 6.
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21 Ennos 2016, 1–4.
22 Sunyol 2013.
23 Kear 1990, 49; Von Meissen 2001, 5.
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25 [http://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU19970350215] accessed 13.04.2021.
26 Açıkada Cet al. 2004, 15–36 .
27 The performer, who is a hunter, had several cases of long searches for the so-called "shot", when, despite an exemplary hit in the heart area, the boar escaped and ran for about a kilometer. It should be noted that in spite of the use of modern weapons and ammunition, the boar was vigorous enough to escape.
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Book Review

Brent Whitford

McCoy, M.D. 2020. Maps for Time Travelers: How Archaeologists Use Technology to Bring Us Closer to the Past. University of California Press, Berkeley, United States.

Maps for Time Travelers: How Archaeologists Use Technology to Bring us Closer to the Past, by M.D. McCoy, is dedicated to the topic of geospatial technologies in archaeology. Other volumes that immediately come to mind, which explore the same or an arguably similar topic, include *Spatial Analysis in Archaeology* by Hodder and Orton, *Beyond the Map: Archaeology and Spatial Technologies* by Lock, *Spatial Technology and Archaeology* by Wheatley and Gillings, *Landscape Archaeology and GIS* by Chapman, and *Geographical Information Systems in Archaeology* by Conolly and Lake. In fact, a brief library search at my institution returned over one hundred and fifty results when filtering for books using the search line "archaeology and geospatial technologies", hence, there is certainly no shortage of books on the topic at hand, which begs the question: what distinguishes *Maps for Time Travelers* from other such volumes? Thankfully, McCoy answers this question very early on in his text. Rather than write a textbook-like introduction on the use of geospatial technologies in archaeology, one that is designed for students of archaeology and/or for active practitioners alike, McCoy composed a book on the use of geospatial technologies in archaeology that is explicitly designed for the interested layperson.

"And so, if you have never read a book about archaeology, but you love time travel and want to see where this is going, buckle up". As the title states, this book is about maps for time travelers. In fact, throughout most of the text McCoy relies heavily on the analogy of the archaeologist as time traveler. He does so in order to pique the interest of his audience by appealing to their (presumably) shared curiosity about the past and to suggest that they, as well, can travel through time. Rather than rely on the more commonly perceived notion of the archaeologist as treasure hunter, as does the popular media by espousing characters such as Lara Croft and Indiana Jones, McCoy suggests to his audience that archaeologists are better characterized as time travelers. Archaeologists, as persons who "are intensely curious about history" are not simply interested in "finding things" but rather are interested in "finding things out". "We are interested in artifacts not for their own sake, but because they can help us understand the societies that produced them". The time traveler analogy is quite effective, not only because it more accurately portrays the core aims and intent of modern-day archaeology—as compared with the treasure hunter trope—but also because it highlights the use of futuristic technologies in archaeology not so different from time machines. Remote sensing and geographic information systems, argues McCoy, are the archaeologist's time machines. Having thus established his time traveler analogy and set up the narrative hook, McCoy then goes on to discuss how geospatial technologies have helped archaeologists access the past and to answer important questions about the past as well.

In terms of its structure, *Maps for Time Travelers* is divided into three distinct parts. Part I serves as an introduction to the history of archaeology and on the development of archaeological theory. McCoy does an excellent job at delivering a crash course on the latter, skillfully moving from antiquarianism all the way to post-processualism in a single chapter without ever forcing the reader to grapple with disciplinary specific terms. He furthermore introduces his audience to the critical concept of multi-vocality and to the importance of viewing the past from multiple different perspectives. He argues that, like a time traveler, archaeologists experience

the past from their own unique present-day perspective and that by producing multiple stories about the past we can ultimately better understand its complexity. He then goes on to elaborate on the important effects of technological developments as they are used to help shape our perspectives on the past.

Part II, in turn, deals entirely with the history and development of the various geospatial technologies commonly utilized in archaeology—such as passive remote sensing, active remote sensing, and geographic information systems. These broader categories include aerial photography, satellite imagery, LIDAR, photogrammetry, ground penetrating radar, digital mapping, modeling, augmented reality, and the creation of virtual worlds, among others. Part II is then filled with numerous archaeological examples, taken from several different regions and time periods that were obtained by using diverse methods to illustrate the variability of the available geospatial approaches in archaeology. In this section, however, McCoy seems to have set aside the task of furthering his time traveler analogy in favor of focusing on the detailed description of the history and development of geospatial technologies themselves, sometimes even venturing into such painstaking detail that I doubt would be appealing to the general layperson.

To borrow McCoy's time traveler analogy, reading Part II felt more like reading through the detailed blueprints of a time machine in which no single part of the machine was overlooked, no matter how inconsequential. In truth, I felt more like a time machine engineer than a prospective time traveler when reading this section of the book. The highly descriptive nature of Part II, it could be argued, additionally relies too heavily on presenting geospatial data alongside minimal interpretation, and thus focuses too much on "finding things" as opposed to "finding things out". Though McCoy does return to the importance of "finding things out" in the next section of

his text, by that point the lay-reader will most likely have forgotten the important distinction between the two aspects of archaeology. It may then have been better to approach them in conjunction all along. That said, I believe that the overly detailed and technical character of Part II as a whole is merely an unfortunate misstep in what is otherwise an interesting and thorough review on the history and development of geospatial technologies.

In Part III, McCoy returns to the aims and intent of modern-day archaeology in a more direct sense. Here, McCoy is focused on showcasing how the various geospatial technologies described in Part II can be used to answer important questions about the past. In other words, now that the reader understands how the time machine was built, it is time to take it for a test drive. In particular, McCoy discusses the ways geospatial technologies have been used to address important questions regarding migration and mobility, subsistence practices, and social organization in the past. The first chapter of Part III interestingly features a section on the use of geospatial technologies in paleoanthropological research, discussing their application to the evolution of habitual bipedalism by using scans of prehistoric footprints. McCoy therefore keeps to an important point that he made much earlier in the text: time travelers should not be restricted only to the exploration of historical periods. Though the section on paleoanthropology is a welcome departure from the more commonly utilized examples of landscape analyses, feature detection, and/or settlement pattern analyses, it unfortunately stands alone as a major alternate example within the wider text.

In that regard, though geospatial technologies are often utilized to compliment and or further the aims of archaeological excavation, a search of the book reveals that the term *excavation* is used only seven times, *excavate/excavated* two times, *digging* five times, and the term *dig* only 3 times. This is especially puzzling considering that the

cover image intentionally highlights the paleoanthropological research previously discussed and focuses the reader on how geospatial technologies can be applied to the study of such small and obscure things as Lower Paleolithic footprints. No doubt, these footprints were also uncovered during the process of archaeological excavation. Why then should other such examples of geospatial technologies applied directly to excavation be omitted? Normally, I would not lament the exclusion of excavation practice in a book that is devoted entirely to introducing the reader to the use of geospatial technologies in archaeology, which for the most part are admittedly most commonly applied to site- or landscape-scale studies. However, considering that the intended audience is composed of laypersons who were not expected to have ever read a book about archaeology, I would suggest that the omission of excavation practice risks misconstruing how archaeologists ultimately come to "find things out". After all, there would hardly be any means of interpreting the numerous examples of geospatial evidence presented throughout the text were it not for the practice of archaeological excavation and its derived knowledge.

In conclusion, I wish to make a disclosure: I am an archaeologist. I am also an archaeologist who so happens to be actively engaged with the use of geospatial technologies in archaeology. It should then perhaps be noted that when I first set out to review *Maps for Time Travelers* by McCoy, I was not anticipating to be excluded from its target audience. My stance vis-à-vis the topic then placed me somewhat at odds with the task of reviewing the book's intent; that is, to communicate the importance of geospatial technologies in archaeology to the interested layperson. Though I must say that I especially enjoyed McCoy's use of the time traveler analogy, and I suspect that the layperson will likely find it appealing as well, I cannot say for sure that the general public will find it easier to approach the subject of geospatial archaeology as a result. I

therefore cannot really comment on whether the book is likely to reach its target audience in any meaningful way. Furthermore, given the high level of description included in Part II of the text, I would rather recommend this book to those who are already engaged with the use of geospatial technologies in disciplines other than archaeology, such that they might discover new applications directly related to their skillset in a field that they may not yet be familiar with. Likewise, I would recommend this book to archaeologists who do not regularly engage with the use of geospatial technologies and who wish to learn about alternate means of answering very important questions about the past.

In either case, whether I consider myself qualified or unqualified for the purposes of this review, I can honestly say that *Maps for Time Travelers* made for a unique and generally enjoyable reading experience. I found myself setting aside, for the moment, my experiences as an archaeologist in favor of approaching the book as a prospective time traveler. Ultimately, the time traveler analogy is really what allowed me to approach this book—devoted to a topic that I have read about countless times before—from an entirely different perspective. In other words, McCoy helped me to travel back in time to the days in which I was also a layperson merely interested in the topic of geospatial archaeology. That I am even more interested in the topic after having read this book is a testament to the effectiveness of the author's approach. Therefore, even if you have read a book about archaeology or two, if you are interested in time travel stories you might consider picking up a copy of *Maps for Time Travelers*.

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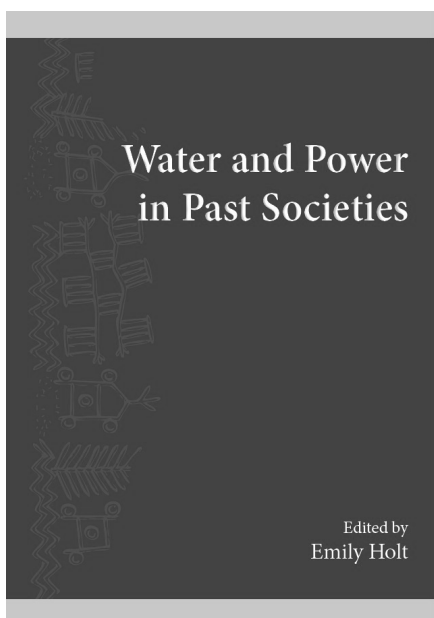Chapman, H. 2006. *Landscape Archaeology and GIS*. Tempus, Stroud.
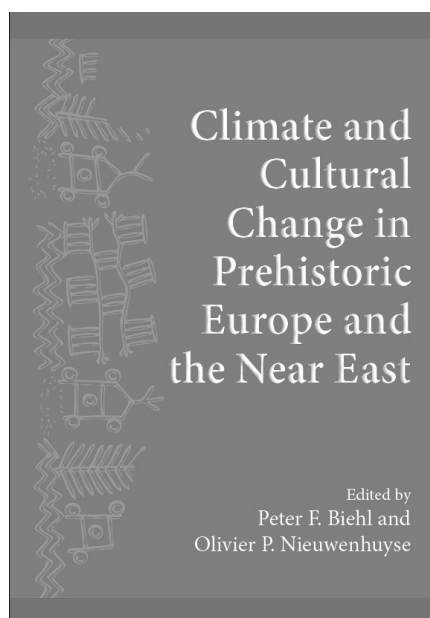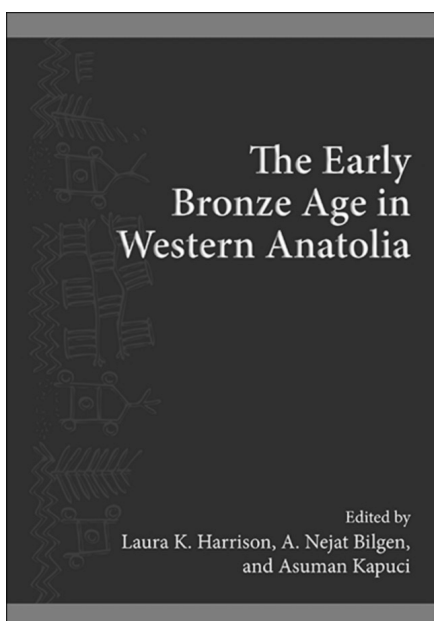
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