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Interpreting the Socio-symbolic Value of Jet and Amber Artifacts as Markers of Religious Transformation in Early Christian Britain

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**INTERPRETING THE SOCIO-SYMBOLIC VALUE OF JET AND AMBER
ARTIFACTS AS MARKERS OF RELIGIOUS TRANSFORMATION IN EARLY
CHRISTIAN BRITAIN**

by

Rachel Strohl

A Thesis Submitted in
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ABSTRACT

INTERPRETING THE SOCIO-SYMBOLIC VALUE OF JET AND AMBER ARTIFACTS AS MARKERS OF RELIGIOUS TRANSFORMATION IN EARLY CHRISTIAN BRITAIN

by

Rachel Strohl

The University of Wisconsin-Milwaukee, 2022
Under the Supervision of Dr. Bettina Arnold

During the Medieval period in Britain, changes in the lived materiality of religion aided in the reinforcement of new ideologies. Christian missionaries and foreign invaders introduced new religious structures and cultural paradigms from the Continent that included novel symbolic forms and material markers. In pre-Christian contexts, jet and amber are thought to have been used for religious purposes due to their presumed magical properties, such as burning and generating a static charge. These materials also served as lucrative exports throughout Europe and beyond before the introduction of Christianity. Textual records from the Mediterranean as well as archaeological evidence for the use of exotica like jet, amber, and coral confirm the fact that their value was not just due to their rarity. Using a data set of 203 amber and jet artifacts recovered from contexts in south-central England and Scotland dated to a period from AD400 to AD1200, this project investigates how the use of amber and jet was impacted by the introduction of Christianity. This investigation of cultural and religious syncretism focuses on a specific set of objects and materials with implications for studies of material transformation in the wake of other cultural contacts.

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Chapter 1: Introduction and Literature Review

Practiced by nearly 2.4 billion people worldwide based on recent estimates (worldpopulationreview.com), Christianity has had a major influence on the cultural practices of people around the world for millennia. The rapid global spread of Christian ideology was due to the work of missionaries and local Christian communities, but it was also the result of local willingness to adopt what in some cases would have seemed a very foreign creed. Usefully from the perspective of scholars interested in such transitions, this ideology manifested itself in the form of a material culture that marks the movement of Christianity through space and time (McDannell 1995: 273). While conversion-related material culture reflects the passage and adoption of this new religious movement, space remained for local pre-Christian material traditions to persevere within the Christian one, easing the transition from one belief system to another throughout the globe (Stevens-Arroyos 1998). This thesis investigates how the transition to Christianity in Britain between AD400 and AD1200 is reflected in the layering of the new Christian ideological practices onto the use of amber and jet/jet-like materials (JLM) in pre-Christian religious material culture.

Christianity in Britain

Religion is an enigmatic part of the human experience that does not always manifest itself in material form. Many religious experiences are incredibly personal and focus more on the senses, which do not preserve within the archaeological record. These experiences, however, can be codified in historical texts, expressing the mindset of certain individuals throughout time. One such account, and one of the foremost chronicles of early Christianity in England, is the work of Bede (AD672/3-735), a Benedictine monk in the kingdom of Northumbria (Ray 2006; Sellar

1907). Studies of his texts, including his *Ecclesiastical History of England*, demonstrate that Bede believed that he was one of the major chroniclers of the period, as well as being instrumental in spreading the Latin Christian faith and culture (Ray 2006). Bede's account of the Christianization of Britain, specifically his personal experiences in Northumbria, provides a first-hand record of this time of great change in Britain's history (Goffart 2006). Bede comments mostly upon the significance of miracles throughout the work, an important part of his experience of Christianity. These miracles were often followed by large-scale conversions of the local Britons to the Christian faith. Miracles demonstrated the power of God to the local people and were often accompanied by the presence of a Saint or a holy relic that was important in its production. Bede's work indicates the back-and-forth nature of the Christianization of Britain, with chapters of his *Ecclesiastical History* often opening with indications of the powers that were in charge and what religious beliefs they practiced (Sellar 1907). The number of these introductions outlining shifts in political and religious alliances demonstrates the instability of faith and politics in Britain and the role played by violence in the conversion process (Sellar 1907). Bede's ecumenical writings indicate that Britain had been home to many religions for centuries before the introduction of Christianity, from the early pre-Christian traditions of the Britons through the Roman polytheistic faith, to the new Christian one. His work paints a picture of a religiously diverse and volatile Britain while Christianity was in its infancy in the area. This instability generated a British Christian culture with unique traits distinct from the Continental church, providing an especially salient illustration of how religious ideologies can be blended in the face of change.

While Bede's accounts document the historical and theological changes occurring in Britain at that time, they also highlight the tension that exists between the archaeological study of

a culture and the historical texts produced in tandem with the archaeological record. Historians and archaeologists have often argued over the merits of their respective disciplines, each claiming that their discipline offers the most reliable insight into the past (Feinman 1997). Gary Feinman has made note of a number of these issues, such as the use of historical texts to pigeon-hole archaeological finds, the focus on traditional methodologies as law, and the picking and choosing of only those historical texts that support the desired archaeological evidence (1997: 372-73). What is important in this practical critique is that neither archaeology nor historical documentation can provide a complete picture of what occurred in the past. Looking back to Bede, monastic texts from this period were designed to justify the new Christian faith, supporting the conversion of Britain and warning any and all reverts away from their pre-Christian traditions (Goffart 2006). Bede's works are not a unique case in the conflict between historical texts and archaeological records. A number of studies out of Asia have highlighted this issue, where archaeological processes are governed by the historical frameworks of a united Asian archaeological effort (Feinman 1997: 368-69). But in the wave of advancements in archaeological theory and practice, new studies combine texts and material remains to produce a more holistic picture of events in the past. In Roman Egypt, for example, especially well-preserved texts offer insights into the differences in settlement styles between Egypt and the rest of the Roman world (Nevett 2011). Texts and archaeological evidence work together to provide a clear stylistic distinction between two civilizations, offering new avenues for historical comparison. Work conducted on the frontier roads of New York during the colonial expansion are another demonstration of how historical texts can aid in understanding the evolution and function of certain archaeological elements, in this case explaining the early corduroy road systems in the state (McQuinn 2018). This case study also provides a practical example of the

use of historical accounts in discerning where these roads could be located, helping local cultural resource management firms preserve these pieces of historical value as construction expansions occur (McQuinn 2018). Settlement studies conducted in Latin America likewise demonstrate the use of historical texts in understanding wider cultural contexts that influenced the development of individual building styles (Funari and Zarankin 2003). The above-mentioned case studies show the importance of utilizing both historical texts and archaeological evidence in understanding phenomena in the past. This project of the syncretistic use of amber and jet/JLM in the early Christian period in Britain will add to the archaeological evidence supporting Bede's description of British Christianity, illuminating how this religious ideology was practiced viewed through the lens of material culture.

As indicated above, the Christianization of Britain was not a seamless transition. Instead, it was full of conversions and reversions, characterized by individuals shifting between their pre-Christian religions and the new Christian one in response to different social and cultural pressures. One source of pressure for the conversion of the local populations was the presence of missionaries such as those sent out by St. Gregory the Great (AD540-604), the future Pope Gregory I, who established the Gregorian Mission. This large-scale Church revision promoted the spread of Christianity, with a special emphasis on the communities of Anglo-Saxon Britain (Negreanu 2014). These individuals traveled from the more-established churches on the Continent to convert the local British peoples. They often manipulated the local political situations to further their cause. These missionaries would start with the local kings, converting them and their families to Christianity. Kings at this time traced their lineages back in time to pre-Christian religious entities to demonstrate the strength of their royal line (Chaney 1960; Yorke 1990). This indicates a tradition of linking religious affiliation to political power. These

powerful ruling families, once converted, would become extremely involved in the faith, often through the women in their families (Negreanu 2014: 96). This would then trickle down to the people they governed, converting others in their kingdom to the new religion, eventually spreading the faith throughout the whole island.

Another source of pressure for conversion and reversion was the Viking raids in the north (Holman 2007). These raids were seasonal attacks that brought resources from around the world back to Northern Europe, creating vast amounts of wealth for local ruling lords (Holman 2007: 32-33). Christian settlements were often places of great prosperity, with items of wealth brought over from the Continent housed in shrines to the saints in relatively isolated locations with little protection (Holman 2007: 32). These locations were prime targets for raiders. In the wake of the mass destruction and death resulting from this raiding activity, local communities responded in various ways. Some communities opted to revert to pre-Christian traditions, believing that this might offer a level of protection from future raids. In other places these violent lightning raids strengthened the resolve of these Christian communities to retain their new faith (Holman 2007: 32). An example of this is the massacre at the Lindisfarne monastery in AD793 (Holman 2007: 24), which was decimated by Viking raiders from Norway and demonstrates the devastation wrought by these violent 8th century raids. Viking incursions were viewed by some as a punishment for insufficiently pious spiritual practices on the part of the local community. Christian leaders would use these events to reinforce the important elements of lived Christian religion and strengthen the church within those areas. Instead of reverting, like their neighbors, these communities tightened their control on their circles of influence, supporting stronger adoption of doctrine and practice in an effort to stop these raids from occurring. In short, the adoption of Christianity was not a simple evolution from pre-Christian traditions to Christian

ones. Instead, Christianity and pre-Christian religions engaged in a delicate dance of relative importance over time and in response to shifting cultural and social pressures reflected in religious material culture.

A number of endogenous pressures also contributed to the instability of Christianity in Britain. Local political issues created a labile social system throughout the island. Britain was not a unified island nation, but a collection of petty kingdoms, each with their own social and cultural traditions with a history of political turmoil between the different lands (Yorke 1990: 9, 15). Early Anglo-Saxon kings promoted their power and individual agendas within their territories through their military strength. These skirmishes also spread the ideological values of each kingdom. It was common for local kings to align themselves with traditional religious and mythical beings to strengthen their claims to the throne (Yorke 1990: 15-16). As these leaders battled for dominance, they would spread their local traditions to the subjugated lands, causing the conversion of neighboring territories to Christianity or reversions to pre-Christian religions. These fluctuations are documented in Bede's histories, as pagan kingdoms such as Northumbria invaded local Christian kingdoms, turning the locals back to their traditional belief systems (Sellar 1907).

The Christian faith also had its own internal instabilities apart from conversion of the local populations. As Christianity spread throughout Britain, local church leadership developed traditions that deviated from those in other regions of the island (Leyser 1997: 180; Sellar 1907). These eclectic monastic traditions conflicted with one another, threatening the stability of the Christian faith within Britain. One of the major controversies was the celebration of Easter, which was different in the English and Scottish churches (Sellar 1907). England followed the Roman timeline, which celebrated Easter on the day agreed upon at the Council of Nicaea (Sellar

1907: 128). The Scots utilized a different calculation to determine the date of Easter Sunday, which caused tension between the two churches. This prompted the English church and its missionaries to write long letters imploring the Scottish churches to follow the more widespread practices of the Roman Christian faith. This historical evidence demonstrates that Christianity in Britain was not isolated from the local influences exerted by the communities in which the religious houses were located. This thesis explores how such influences may be reflected in the material culture associated with this period of religious conversion.

During the 10th century, British Christianity underwent a period of monastic reform (Leyser 1997: 179). The early monasteries of the 7th century were free to experiment with how they organized their religious practices (Leyser 1997: 180) and these semi-independent monasteries reflect a lack of religious unity within Britain as a whole. Local political leaders saw this as a threat to stability within their kingdoms and enforced reform within these monasteries. These reforms eventually brought unity to all the main Christian hubs throughout Britain and were initiated by the local ruling authorities, a major difference between the early Christianity of the Continent and that of Britain (Leyser 1997: 181). These local rulers were the physical protectors of their respective Christian kingdoms, and therefore primed to solidify the new changes in the local secular communities. They protected the local communities and their military reputations enforced the changes throughout their areas of influence. These relationships offered benefits to the kings as well as the Christian centers, and the strength of their cults of saints supported their claims to rule in their respective territories. An archaeological indicator of this time was the increase in parochial churches throughout the land (Leyser 1997: 184). These churches were used to spread the reforms from the hubs of Christianity throughout the rest of the

island. These churches passed down the religious ideologies to the lay people, which included the material culture of religious reform.

The introduction of Christianity was not a linear evolutionary process in Britain. Brought over by missionaries, its popularity ebbed and flowed with changing political powers and the introduction of new cultural pressures. The material culture associated with the conversion to Christianity reflects this oscillation. This thesis investigates how early Christian material culture in Britain reflects a complex rather than a simple shift from pre-Christian materials to Christian ones. The religious materials made of amber and jet/JLM produced during the Medieval period are viewed as a proxy for these changes, a physical manifestation of the amalgamated ideologies that played an important role in British religious life during this time.

Syncretic Religions

One of the foundational principles of this thesis is the concept of syncretic religions. The definition of syncretic religions, as applied in this project, is as follows: *religious practices formed from the meeting of two separate theological traditions to create a unique ideological, and therefore material, culture* (Oxford English Dictionary; Stevens-Arroyos 1998: 220; van der Veer 1994: 185). This definition draws especially on the work of Stevens-Arroyos (1998), but retains elements of Erasmus of Rotterdam, who originally coined the phrase in the 17th century, alongside Calixtus of Helmstadt (van der Veer 1994: 185). Syncretism stems from the concept of formal cognitive systems, which is the intellectual and ideological set of traditions that dictate the action and beliefs of a group of people (Stevens-Arroyos 1998). Every human group has their own unique formal cognitive system, which can be as narrow as a local community or as wide as an entire cultural complex. This project focuses on formal cognitive systems at the religious

belief scale. When two or more of these groups meet, their formal cognitive systems also intersect, which can result in conflicting ideologies. Assimilation occurs when one group adopts the formal cognitive system of another group, effectively changing their worldview to match those of the influencing group (Stevens-Arroyos 1998: 219). This eventually may take the form of a complete religious conversion, where the fundamental ideology and all subsequent practices and material culture match those of the introduced religious tradition, or it might manifest itself on a smaller scale in the form of the adoption of a particular set of symbols, for example. Syncretism occurs when one group retains their formal cognitive system but adopts elements of another to explain this change (Stevens-Arroyos 1998: 220). Christianity is often considered a particularly good example of this principle, which is why it has been so successful worldwide. Christianity allowed local communities to keep elements of their previous ideologies but changed the practices as well as the ways in which these ideologies were expressed. An example would be allowing local communities to retain the idea that a cosmic natural force was the guiding principle of their lives but replacing magic or animism with the Christian God. In some ways, this is an extension of the system also adopted by the Romans, as can be seen in the syncretic pantheons of Iron Age Gaul that reflect the process known as *interpretatio* (Webster 2001).

Formal cognitive systems provide an explanation and a roadmap for how ideological backgrounds, including religious ones, change over time (Leopold and Jensen 2016). But for personal ideological changes to be seen by others, these psychological shifts need a material manifestation in the newly adopted practices. Lived religions provide a social space for these practices to take material form. Lived religion takes the ideological values of a religious formal cognitive system and turns them into practices that are visible within a community (Morgan

2010; Raja and Rüpke 2015). These include actions, such as attending prayers and church services. But they can also be material, such as changing the accessories worn to these functions or the way in which an individual is buried. These actions and material goods create a sense of community surrounding the ideologies of a formal cognitive system for the practitioners of the emerging religious practice. In other words, lived religions allow people to demonstrate the personal ideologies of their formal cognitive system to other individuals. These public demonstrations develop communities where these practices are codified and become the standard way of demonstrating the group ideology. These codified practices generate a new artifact typology that provides a visual indication of a change in ideology. This principle can be seen in new religious movements (NRMs), such as modern neopaganism (Urban 2015). While members of the neopagan religious movement might disagree on ideological elements, their shared material culture is based on a codified ritualistic practice of spells and enchantments, like the *athame* or the pentagram, that sets them apart from more mainstream religious movements (Urban 2015: 166). These NRMs also demonstrate the versatility of symbology and how that demonstrates the complex history and shifting ideologies surrounding religious practice. The pentagram, a symbol used to represent natural processes and the human body in neopaganism, can also be used in its inversion during Satanic rituals to represent the more hedonistic side of the human experience (Urban 2016: 183). These two NRMs utilize the same symbol but use it in different ways to represent the different ideologies of their religious experiences. This project investigates how the practices of the new Christian ideology, blended with the pagan ideologies of pre-Christian British religions, generated a new material typology that demonstrates this uniquely British form of Christian practice.

Material culture is also important in the development of the “economy of the sacred” (Morgan 2005). Such items cover a number of ideological and physical contexts. While the extent of these contexts is explained more fully within Morgan’s text, the most important categories for this project are twofold. First, these materials create a space of memory and place making (Morgan 2005: 22). Morgan describes how physical items create a place in which the individual can practice their ideological beliefs, as well as a place for them to remember the important elements of the sacred, such as the creation of a shrine on the side of a road dedicated to a deceased loved one lost in an automobile accident (Morgan 2005: 23). This creation of place is also seen in the work of Howard Williams, who studied how grave goods placed in cremations in post-Roman Medieval Europe worked to generate memory of a deceased individual and their role within the local social structure (2013). Williams claims that these religious tokens, indicative of the local traditions, offered the living a chance to create memorial spaces within the funerary rites surrounding an individual’s transition from life into death. I argue that these materials also allow individuals to remember their own personal histories in the context of their religious practices. Within Britain, these material goods created the space and means for individuals to practice ideological values that might not have fully connected with the new formal cognitive system as modeled by the Christian church. Such material culture provided a safe space in which to keep these older traditions alive in the context of the new religious ideology.

Second, material goods provide a means of communication between individuals in religious contexts (Morgan 2005: 27). This project investigates the communicative properties of religious material culture in two ways. First, it investigates how material culture allows for the spread of new religious ideologies and practices. The use of traditional materials and motifs

provided a common ground between the missionaries from the Continent and the local British communities they were trying to reach. An obvious example is the Christian cross as a representation of the sacrifice made by Jesus, one of the foundational principles of the new religion. Even such basic symbols can be re-shaped to accommodate existing belief systems, however. In the colonial conquest of Haiti, the Christian cross was reinterpreted in the face of local traditions (Desmangles 1977) by being subsumed into Vodun practices, transforming the cross into a magical charm instead of a Christian symbol (Desmangles 1977: 15). While this particular case study shows more resistance in local communities to the Christian formal cognitive system, it also demonstrates that symbols can provide a basis for the communication of new religious ideas. They provide a common base for the new formal cognitive system to reach the local communities and become more tolerable and easily accepted. Modern studies of Christian conversion demonstrate that this exposure to symbology is a crucial step in the spread of religious ideologies (Iyadurai 2011: 516). Symbols like the cross strengthened the reach of Christianity and created a platform for local Christian practices that incorporated elements of local traditions to reflect ideological changes. Material culture also allows individuals to communicate traditional practices to new generations that are influenced by a new religious ideology. The continued use of certain motifs or raw materials allows individuals to hold onto their traditions, be they practical or ideological, while the very foundations of those traditions may have changed. David van Alten demonstrated this concept in his work on the “glocalization” of Roman religions throughout the empire between BC50 and AD300 (2017). His work demonstrates how local communities developed their own visual representations of the Roman coming-of-age ceremony that reflected their individual meanings and cultural traditions. A good example is representations of the ceremony of thanksgiving for children at the shrines of

Dhronecken, in Germany compared to images praising children entering young adulthood in a nearby shrine to Lenus Mars (van Alten 2017: 11-12). These local traditions and motifs communicated what each area held sacred in the coming-of-age ceremony. While both communities practiced the same “global” ceremony, each community adjusted the imagery and material culture to reflect their local beliefs. The material culture that is produced during the practice of ritual allows different formal cognitive systems to communicate with one another and provides the space in which syncretic religious beliefs can form and solidify within a community.

Burials during the Conversion period in Britain demonstrate how material culture can communicate both new and pre-existing ideologies. Anglo-Saxon cemeteries during this conversion period often showcased syncretic religious items (Geake 1995; Sherlock 2016). While Christian burials were expected to be generally austere and contained few or no grave goods, the archaeological evidence tells a different story (Sherlock 2016: 245). Individual choices influenced the physical displays of these ideologies in the mortuary context. Some graves reflect the reuse of grave goods common in pre-Christian religious traditions (Geake 1995). Such items include amulets or large numbers of beads placed in the waist area. These items were used in pre-Christian traditions as protections in the afterlife (Geake 1995: 68). In the new Christian system, the crucifixion of Jesus Christ was thought to protect the deceased individual on their journey to the afterlife. Therefore, these prophylactic items were not necessary, promoting the popularity of graves with few personal grave goods apart from representations of the cross. The placement of these objects – which could have been viewed as amulets -- in early Christian graves represents continuation of the pre-Christian traditions, adding extra protection to loved ones as they passed to the other side. This demonstrates that traditional

beliefs, actions, and material goods were not simply abandoned as the new religion became more widespread. Instead, these practices were continued and passed on to the next generation, developing a religious tradition that blended the pre-Christian traditions with the new Christian ones. These studies focus on the physical representation of syncretic religions in the material culture of burial and how those items can be used to understand the mindsets of communities in the past.

Syncretism in Britain

Syncretic religions as manifested archaeologically have been studied throughout British prehistory and early history, especially in mortuary contexts (Gilchrist 2008; Huggett 1988; Williams 2011). These studies investigate how graves changed during the transitional period of Christianization. Items with prophylactic or curative properties from pre-Christian traditions are still present in graves during this time (Gilchrist 2008). One of the goals of this thesis was to determine to what extent the patterns of deposition and the material choices associated with objects made of amber and jet/JLM changed in the centuries after the introduction of Christianity to the island. Grave goods made of these materials are one of the most reliable ways of recognizing a transitional period grave, as traditional Christian graves were often austere with few grave goods at all (Gilchrist 2008: 121). These items demonstrate that there was a period during which pre-Christian material culture was mixed into the new Christian practices. These mortuary practices were public performances of memory, focused on the individual (Williams 2011: 3). The inclusion of these material representations of traditional religious beliefs promoted the memory of these traditions in the face of new religious influences. These items also played a role in the transformation of magical items within pre-Christian Britain. Originally, these were

personal items that had prophylactic properties, utilizing natural materials that were used for healing and created spiritual connections between people and their gods (Gilchrist 2008: 123). However, as Christianity became the dominant religion, these items disappeared from graves in favor of items that represented the cults of saints, where body parts from Christian martyrs were publicly displayed and utilized in ritual practices (Gilchrist 2008: 120). Magical items underwent a transformation during this period, from personal adornments that were accessible to the individual, to the remains of saints, which were kept in public domains like churches. This change is evidence of syncretism within the new religious movement of Christianity, as these groups continued to use magical items for healing and protection in the mortuary context but utilized an element of the Christian faith (saints) to express this belief.

There are other examples of cultural syncretism in Britain that can be useful in understanding how this process might have played out in religious contexts. During the early years of the millennium (c. AD60-AD250), Roman soldiers invaded Britain and colonized most of the island. Jet was already a common form of personal adornment in Britain at the time (Hunter 2014). As these Roman soldiers continued their advance, they began to use some of the local raw materials. Jet was gradually used more frequently in the course of the Roman occupation, mainly as bangles and rings. The presence of these artifacts is not enough, however, to postulate the presence of a syncretic material culture. Another possible explanation is that these items were the spoils of conquest that might have been stolen from local communities or from the bodies of the dead (Hunter 2014: 158-159). The appearance of jet/JLM in Roman contexts also could be indicative of trade between Roman occupying forces and local communities. However, there is evidence from this time period that Roman soldiers adopted jet as a way to express their own cultural ideology (Hunter 2014). Artifacts that utilized motifs

common in the Roman empire, but not found in pre-Roman Britain, appear in the archaeological record of this time. One such item is the Roman coin mold of Bar Hill, used to produce Roman denarii (Hunter 2014: 158). The use of local raw materials to create items more in line with the ideologies of Rome show that these cultures were not always polar opposites. While often represented as in conflict or as violently replacing one way of doing things with another, syncretism represents a blending of the cultural and ideological values of contacting groups. It also sets a precedent for the syncretic processes that were to emerge again in Britain with the introduction of Christianity. While this initial process of syncretism occurred centuries before the start of this project's timeline, it shows that the communities of Britain had a history of retaining their local traditions in the face of new cultural and social change before the introduction of Christianity.

Jet and Jet-like Materials (JLM)

Jet and jet-like materials (JLM) have been extensively studied geologically (Burleigh and Whalley 1983; Watts and Pollard 1996, 1998) but archaeological studies have been less common, especially in historical contexts. These materials have particular geological profiles, a result of their origins as organic compounds, which makes more specialized provenance testing possible. Jet/JLM consists of petrified wood or other organic matter, formed during the Jurassic Period 199.6- 145.5 billion years ago (Watts and Pollard 1998: 4-5). Over extended periods of time, this organic material petrified under pressure into a dark brown or black stone that is easily carved and can be polished to a high luster that can include detailed patterns. The organic origins of this material means that each jet/JLM deposit has its own unique chemical structure based on

the local geological resources (Watts and Pollard 1998: 2). This allows geologists to identify the sources of the jet/JLM used in the production of artifacts.

Within Britain specifically, there are two main deposits of jet/JLM (Figure 1.1). One is located in Whitby, a town on the east coast about 270 miles north of London (Watts and Pollard 1998: 4). This vein was used for high quality artifacts due to the length of time it was formed under water, accumulating more oil residue from marine plankton. Whitby jet is denser and can be polished to a higher shine than other sources, and it is less prone to break when worked (Watts and Pollard 1998: 40). The other main source is the Kimmeridge oil shale vein in Wessex, which provides jet of a similar quality but incorporated smaller quantities of marine plankton, making it slightly less glossy than its Whitby counterpart (Watts and Pollard 1998: 5). Because of the popularity of Whitby jet for its superior shine, many archaeologists have assumed that most jet/JLM artifacts are composed of materials that stem from this vein (Watts and Pollard 1996). Kimmeridge oil shale, however, has a longer history of use than Whitby, starting during the prehistoric era (Watts and Pollard 1996: 125). Kimmeridge oil shale was also popular during the Iron Age and on through the Roman Period, with evidence of artifacts made from this material being found on the European continent (Arnold et al. in press; West 2016). Kimmeridge oil shale was most commonly used in the creation of arm bands, a popular form of personal adornment during these time periods (Watts and Pollard 1996; West 2016). While both Kimmeridge and Whitby jet were mined into the historic periods in Britain, production out of the Whitby vein increased during the 1800s, made popular by Queen Victoria in the form of mourning jewelry after the death of Prince Albert (de Carvalho et al. 2013: 2). There are also a number of other locations for raw jet/JLM within Britain, mainly in ancient swampy areas where lignite, a jet-like substance, developed. These types of shale are less compressed and more prone

to breaking, making them less ideal raw materials for artifact creation. However, these more delicate forms were used in the production of beads in later centuries, as the increased demand for jet/JLM jewelry bled the more refined veins dry (de Carvalho et al. 2013). Various studies have made use of chemical and structural comparisons of different types of jet and JLM from all over the world. Watts and Pollard's contributions have demonstrated the differences in British jet/JLM deposits (1996,1998). In 2006, a wider study tested the reliability of analyses of chemical compositions of jet/JLM, creating a more robust comparison of these materials (Borrego et al. 2006).



Figure 1.1 Locations of Whitby and Kimmeridge Jet/JLM veins.

Other studies have focused on jet/JLM in other settings, like the work of Murat Hatipoglu et al. (2013), which focused on distinguishing between jet and Oltu-stone, a jet-like substance, emanating from Turkey, and the work of a Chinese team on the origins of jet beads from a Ningxia cemetery (Sun et al. 2020). While these studies have generated valuable information, the tests required are destructive. Artifacts are ground up and run through chemical composition tests, such as infrared microscopy, to identify their compositional signatures (Watts and Pollard 1998: 39). New advances in technology such as reflected light microscopy are less destructive, preserving the artifacts for future studies, but are expensive and not readily available (Allason-Jones and Jones 2017; Sheridan et al. 2002; Sun et al. 2020). These provenance profiles have been used to develop an informal database for the study of jet/JLM, providing the chemical and physical profiles of different veins throughout the world for comparison when studying the provenance of new or curated finds.

Scientific studies of jet/JLM have implications for the social sciences as well. The ability to identify the origins of a particular sample can illuminate what we know about the exchange of goods and the importance of certain artifacts based on the rarity and prestige of different veins of raw materials. One such study investigates the exchange of jet between South America and the Caribbean Islands during the pre-Columbian period (Brock et al. 2020). After testing a number of small carved artifacts from different Caribbean Islands made from black stone using four types of microscopy, the researchers concluded that these artifacts were made of cannel coal, a jet-like material found only in South America. This discovery generated new ideas about trade between the South American continent and the Caribbean Islands (Brock et al. 2020). Jeffrey T. Rasic demonstrated the existence of trade routes in the North American Arctic during the prehistoric period by testing the provenance of a number of materials, including jet (2016). His

study showed that understanding the provenance of raw materials used to create material culture can provide a chemical pathway for mapping cultural interactions in the past. The studies mentioned above reveal the past interactions of communities with one another, providing data on the cultural impact not only on the economy but on the interactions between different groups of people and the exchange of social and cultural ideas alongside these raw materials.

Jet/JLM has had a long history of use in Europe generally and Britain specifically. Studies conducted on the prehistoric use of this material demonstrate that jet/JLM has long been used in Europe as a form of personal adornment (Frieman 2012, 2013; Sheridan and Davis 2002). Early prehistoric jet/JLM ornament production was low scale, especially when compared to the rampant production during the 1800s (Sheridan 2017: 12). One of the most popular forms of jet/JLM artifacts during the prehistoric period are elliptical beads fashioned into intricate necklaces. More recent studies, however, have suggested that the classification of these beads as necklaces cannot be presumed without further analysis (Frieman 2012). The beads are found disjointed within graves and archaeologists string them together, using a common form of gold necklace as a guide (Frieman 2012: 8). Therefore, it is more accurate to state that the most common form of jet/JLM artifacts are beads rather than necklaces. While the elliptical beads are the most common, other shapes include the V-bored buttons common to the 3rd and 2nd millennia BC (Shepherd 2014). These items were of high quality and highly prized, as evidenced by the reuse of broken materials in further jet/JLM artifact creation and repairs to these “necklaces” if they were damaged (Sheridan and Davis 2002: 822; Woodward 2002).

Jet/JLM artifacts from Britain also played important roles in the social practices of this community (Frieman 2012; Pope and Edwards 2012; Shepherd 2014). Because of the highly prized nature of these beads, they are often indicators of wealth and status within a community

(Frieman 2012). However, they also have wider social implications, including representations of gender. Exotic goods, like jet/JLM, were often used to demonstrate a high-status, female identity (Pope and Edwards 2012: 469). Here, jet/JLM objects are utilized in the expression of social roles, representing both wealth and gender to those in the community. Studies have also utilized jet/JLM artifacts to understand the reach of different cultural complexes throughout prehistoric Europe (Price et al. 2004; Roberts and Frieman 2012). The presence of jet/JLM has been used as a marker of both the Beaker culture (Price et al. 2004; Woodward 2002) and the Chalcolithic frontier in Northwest Europe (Roberts and Frieman 2012). These studies have had major implications for our understanding of prehistoric migration and social interaction, utilizing material culture as a marker for these migratory processes. Jet/JLM studies have demonstrated how items made from particular raw materials were used to communicate different ideas to a community, either in the form of roles within society or their particular cultural identity. This thesis utilizes this pre-established principle to determine how these raw materials communicated religious meaning in early Christian Britain.

Jet/JLM objects were subject to the same technological changes as other crafts during prehistoric times. Catherine Frieman has studied how the development of jet/JLM-working in Britain is indicative of skeuomorphism, or the copying of elements of artifacts made of a particular raw material utilizing an alternate material (Frieman 2013). Her work showed how jet/JLM artifacts closely resemble those made of gold, mainly in the morphology of the jet/JLM spacer bead necklaces and gold crescent necklaces popular in prehistoric northern Europe (Frieman 2013: 318). Jet/JLM itself was subject to skeuomorphic processes in association with the introduction of faience technologies as well (Sheridan and Davis 2002: 819). Faience is a form of glass that is easier to produce and provides a wider range of colors and patterns than

beads made of jet/JLM or amber. The introduction of faience caused the use of jet/JLM in northern Europe to decline until the Roman period (Allason-Jones et al. 2002; Hunter 2014). The earliest uses of jet/JLM in the Roman Empire were for fuel, as veins of jet/JLM from Spain to the Rhineland were exploited (Allason-Jones et al. 2002: 126). When the Roman forces reached Britain, they encountered jet/JLM used for a number of other purposes, including personal adornment. As the Roman occupation of Britain continued, the use of jet/JLM spread throughout the Continent and the forms became more complex (Hunter 2014: 158). In more recent historic contexts this material saw a resurgence of popularity during the 19th century in Britain (de Carvalho et al. 2013). After the death of her husband, Prince Albert, Queen Victoria entered into a long period of mourning, during which the jet/JLM jewelry she wore was prized for its lustrous black color and became an essential material marker of bereavement (de Carvalho et al. 2013: 134). These adornments were much larger than those of previous periods, following the fashions of the time and causing an increase in demand and production of these items (de Carvalho et al. 2013: 134). This increased popularity greatly decreased the supply of this material, turning these pieces once again into status symbols. As this brief overview demonstrates, jet/JLM has been used throughout British history and prehistory, remaining a popular form of personal adornment throughout the island over long periods of time but inscribed with different meaning as the cultural contexts in which it was used changed.

Amber

Amber is a petrified tree resin that has the added benefit of being an excellent preservative (Burleigh and Whalley 1983) and has been extensively studied throughout the world. Inclusions of insects, plant remains and other materials in amber deposits have made it a

highly sought-after raw material for the creation of a number of different items throughout time. Amber has provided invaluable data for paleontologists, who study the perfectly preserved life forms from previous eras embedded in the tree sap (Grimaldi et al. 2002; Perrochot and Neraudeau 2014). Various scientific methods are used to date amber materials, some of which are similar to those used for analyzing jet/JLM. Some forms of testing illuminate the origins and distribution of certain populations of prehistoric animals and insects, thereby dating the amber in which those insects are trapped (Burleigh and Whalley 1983; Wolfe et al. 2016). These deposits, however, could not always be chronometrically dated, so studies of amber tended to focus on whether the specimens fell within a particular time range. Other studies focus on where amber deposits were developed, such as the work done by Seyfullah et al. (2015) on pollen inclusions found in New Zealand amber. These inclusions provided floral indicators of specific locations within New Zealand where these amber samples formed, providing geographic locations for the samples. Fourier transform infrared spectroscopy (FTIR) was able to determine the relative ages of these ambers, which were produced during the Miocene period. Manuel David Peris-Diaz and his colleagues took dating amber one step further, determining both the age and location of amber samples from the Czech Republic and Baltic region (2017). These studies have provided both chronological and geographic data on the origins of amber materials, creating a reference database of amber deposits for comparative studies.

Newer studies have focused on identifying the geographic origins of raw amber through chemical tests (Angelini and Bellintani 2005; Łydzba-Kopczyńska et al. 2012; Teodor et al. 2010). These geographical source data illuminate trade routes and important nodes of interaction, or lack thereof, related to archaeological samples. For example, researchers investigating an amber jewelry hoard found in Lower Silesia, Poland, utilized chemical spectroscopy to help

source their materials (Łydzba-Kopczyńska et al. 2012). In doing so, they were able to define the amber trade routes through this area, which was a focal point of Mediterranean and Baltic economic interactions. Teodor et al. (2010) were able to determine that amber beads from Romania were locally sourced using FTIR, indicating that they were operating outside of the Amber Route, a wide-ranging system of trade routes from the Baltic Sea through Central Europe (2010; Stahl 2006). Just as the provenancing of jet/JLM materials can illuminate social interactions in the past, amber studies have also demonstrated how communities in the past interacted through the exchange of amber raw materials and artifacts (Figure 1.2).



Figure 1.2 Sources of amber in Europe (Wikimedia Commons).

Prehistoric use of amber has been best studied in the Baltic Sea region and in the Iberian Peninsula (Angelini and Bellintani 2005; Burleigh and Whalley 1983; Murillo-Barroso and Martinon-Torres 2012; Murillo-Barroso et al. 2018; Sprincz and Beck 2013). These studies highlight the prolific amber trade in prehistoric Europe, spanning nearly all of the Continent and including the British Isles (Murillo-Barroso and Martinon-Torres 2012). These studies also discuss the social importance of amber in prehistory. These long-distance trade routes created wide-ranging spheres of social, economic and ideological interactions throughout prehistoric Europe, indicated by the presence of Baltic amber in Iberia, Finland, and the Adriatic areas (Cwaliński 2014; Nuñez and Franzen 2011; Ordriozola et al. 2017). These studies were able to outline the “Amber Route”, which significantly advanced our understanding of prehistoric trade and cultural interaction. Amber was used as a marker alongside other forms of material culture to demonstrate the physical migration of groups throughout prehistoric Europe (Price et al. 2004). Strontium isotope analysis of human remains from the Bell Beaker Period (BC2500-2000) were used to determine the different areas these people traveled through based on their tooth enamel. Amber artifacts associated with this culture are very distinctive, allowing researchers to support their claims regarding the cultural affinity of migrants like the Amesbury Archer, found not far from Stonehenge and dated to the 3rd millennium BC (Price et al. 2004: 11). The study of prehistoric amber demonstrates its ability to serve as an indicator of cultural and social interactions. This thesis builds upon this history of interactions, generating a new case study on a slightly smaller geographic scale and in a later time period.

Amber was also a common material during the Roman Period (Bliujiene 2011; Cartwright 2017; Croom 2018; Davis 2018). Roman women showed a preference for amber materials, drawn to its exotic nature and its utility as a form of personal expression within their

strict social structure (Bliujiene 2011: 82; D'ambra 2007). Rome continued to use the Amber Route developed in prehistoric Europe, utilizing this precious resource as a means of controlling the circulation of wealth in Europe north of the Alps (Bezeczky 1986; Gregoratti 2013). Amber also played an important part in magical rituals performed by Roman citizens (Bouzek 2016), exemplified by a set of amber die found in Eastcheap, London used in rituals to predict the future (Davis 2018: 75). Amber was utilized widely across Europe throughout pre- and early history. It was an exotic item that was utilized in a number of contexts, including magical rituals. These wider historical trends are referenced in this thesis to generate potential interpretations of the use of amber in Britain during the study period.

The prophylactic use of amber has been well-documented. It has a long history of medicinal uses, both internal and external (Croom 2018; Duffin 2013, 2015). External expressions of these prophylactic associations often took the form of amulets (Duffin 2013: 46). There were a number of uses for these amber amulets in preventing health issues, as demonstrated in the *Historia Naturalis* by the Roman writer Pliny the Elder (AD23-79). Some believed that wearing amber was a way to keep the plague away, while others used these amulets to help ease childbirth (Duffin 2013: 47). In Scotland, amber beads were believed to protect the wearer against blindness (Clark 2013: 3; Duffin 2013: 47). These prophylactic amber amulets were not exclusive to earlier centuries either. Accounts of amber being used to ward off evil intentions are noted well into the 16th century in Scotland, such as stringing amber beads on children to protect them from evil (Clark 2013: 3). Amber was also used internally for health reasons. Ground amber was often added to poultices or burned to remove evils from the body, making it a popular medicinal aid for illnesses like epilepsy or protection in childbirth (Duffin 2015: 43). The medicinal uses of amber are heralded throughout history, both temporally and

geographically. Recipes for amber remedies make appearances in the writings of the Roman physician Galen of Pergamum (AD129-200) in Asia Minor (Duffin 2015: 46-48), in medicinal journals from Tudor England (mid-AD1500's) (Duffin 2015: 50), as well as local superstitions in 18th century Scotland regarding drinking water in which amber had been steeped to ward off evil (Clark 2013: 4). This project aims to add to these studies, demonstrating that items made from amber and jet/JLM were used for physical protection over long periods of time and bridge the ideological transition between the pre-Christian (AD400-AD700) and post-Conversion Periods (AD800 – AD1200) in Britain by changing the material forms of these protections.

In Britain, most of the amber comes from the riverbeds of the eastern coast of England as well as numerous areas in Scotland (Angelini and Bellintani 2005; Clark 2013; Pearce 1976). In prehistoric Britain, amber was used for personal adornment, such as the V-perforated buttons of the Bell Beaker culture found throughout the island during the 3rd millennium BC (Czebreszuk 2003). A number of spacer plate amber beads from this period are believed to have been used for necklaces, like their jet/JLM counterparts (Verkooijen 2013). Amber is also found in British Iron Age contexts, where large numbers of amber beads appear in graves throughout the island, especially in East Yorkshire (Croom 2018: 2). Prehistoric amber use is focused on personal adornment. Amber during the Roman occupation of Britain, however, highlights the supposed magical properties of this material. While beads are still common (Croom 2018), new artifact styles like die were used in the practice of Roman religious rituals (Davis 2018). Amber continued to be a popular commodity in global trade during the Medieval period in Britain (Clark 2013; Coulter 2015; Kontny 2012) and later, continuing to be a prestige good but transformed into a material used for religious purposes rather than solely as personal adornment to signify wealth (Coulter 2015: 121). Amber has a deep history of use in Britain, as both a form

of personal adornment and for its value in religious ritual. Its long history of use makes it a good example of how material culture may reflect the blending of different ideologies that come into contact as communities change over time.

Summary

The introduction of Christianity to Britain has been extensively studied. This project investigates how individuals blended their pre-Christian religious traditions with the new Christian ideology, demonstrating how communities and individuals reacted to these changes. Syncretism has captured the attention of a number of scholars from a variety of disciplines. This study investigates how syncretism presents itself in the material culture of a group undergoing major ideological change as a result of cultural contact, with some aspects of this process being preserved in the archaeological record. While there have been a number of geological and physical scientific studies of jet/JLM, and amber, this project focuses on the stylistic elements and contexts of these artifacts in an attempt to demonstrate how these materials were manipulated by local populations to both accommodate and resist the introduction of a new religious tradition. This study adds to previous studies of syncretic religions within Britain by investigating the ways in which individuals during the Medieval period expressed their changing formal cognitive systems as a result of the introduction of Christianity through the medium of prophylactic material culture.

Chapter 2: Research Questions and Methodology

Research Questions

This thesis explores the lived materiality of syncretic religions and possible geographic differences in the introduction of Christianity to Britain by engaging with the following research questions: What archaeological markers may indicate the emergence of a syncretic religious system? Do the forms and functions of jet/JLM and amber objects, materials believed to have had protective and magical properties in pre-Christian religious contexts, display archaeologically visible changes during and after the introduction of Christianity? Are there observable patterns in the types of objects made and/or decorated with jet/JLM and amber in pre-Christian material assemblages as compared to post-Conversion ones?

The secondary research goals expand on these ideas by investigating how the above-mentioned patterns manifest themselves in geographically significant ways. For example, is there a difference in the patterns of material culture change and the use of jet/JLM and amber raw materials in northern as compared to southern Britain? Are there changes, comparable to those observed by Gilchrist (2008), in the contexts of jet/JLM and amber materials (when those can be determined)? Do these materials appear more frequently in the burials of certain groups (men, women, children, elites) or certain contexts (mortuary, settlement, potentially ritual structures)? Did social pressures in different geographical regions present themselves differently within the archaeological record as reflected in the materials in question?

Sampling and Other Limitations

It is important to note that there were a number of issues with regard to the data that were available for this analysis, which is why it represents a qualitative proof-of-concept rather than a

quantitative comprehensive study of the shifts in symbolic meaning in materials whose value was not based primarily on their functional attributes. The data set analyzed only encompassed 200 artifacts from the time period in question and much of it consisted of fragmented beads. The small number of data points will certainly have skewed the results, as demonstrated by the pattern of chronological changes that emerged during the initial analysis. The collection methods utilized were a contributing factor. Due to COVID-19 restrictions on travel, all documented data points had to be identified online or in conventional publications such as museum catalogs. This created a number of issues, including the limited stylistic information that tends to be recorded in museum catalogs and the fact that data points from publications were limited to a small number of scholars working with these materials. Most of the online databases, catalogues, and previously published data sets did not record detailed contextual information, which influenced the study of contexts and trends, including the research question aimed at investigating possible patterns in the gender differences of burials containing amber or jet/JLM.

While this study focused on artifacts made from jet/JLM and amber, the numbers of artifacts associated with these materials were not similar enough for comparisons between the categories. The absolute number of amber artifacts was much higher than the number of jet/JLM objects, suggesting a pre-selection bias existed for this material. While this may demonstrate that amber was more popular than jet/JLM, or that it was more readily available during this time period, it also means that there were not enough data points to draw any conclusions regarding the relative social and cultural values of each material. The discussion that follows therefore focuses on the data analyzed in the previous chapter as they relate to either jet/JLM or amber separately or together. Further data collection and analysis would be required to investigate the

differences between the two materials but the results of this preliminary analysis suggest that a more detailed study is worth pursuing in future.

Methodology

To investigate these research questions, 208 jet/JLM and amber artifacts from various locations throughout Britain were recorded and subjected to a qualitative comparative analysis based on published data (Appendices A and B). Due to COVID restrictions, the artifacts used in this project were identified using a variety of online resources. Most of these items are currently housed in various British museums, including the British Museum, The Victoria and Albert Museum, and the National Museums of Scotland. The Portable Antiquities Scheme database also provided some of the artifact data points for this project while others are catalogued in various academic publications. Various studies of early Anglo-Saxon Britain showcase how these communities developed their own particular culture in the aftermath of the Roman retreat from Britain in the 5th century AD (Hawkes 2007; Hickey 2014; Kaznakov 2013; Wilkinson et al. 1995). These publications were useful in understanding how early, pre-Christian communities developed material cultures that set them apart from both their Roman-influenced past and the Christian-influenced material culture of later centuries. Some of these publications focus specifically on the Conversion Period and how changes to burials during this period reflected the introduction of Christianity to the island (Sherlock 2016). These studies included useful data related to the process of conversion, before Christian material culture had been fully adopted in Britain. This thesis project also collected data from publications on the material culture of later centuries in Medieval Britain, ranging from theoretical investigations of Christian burials (Gilchrist 2008) to investigations of particular material culture categories, such as jet cross pendants (Pierce 2013). These publications provided the data points necessary for this

investigation of the utility of jet/JLM and amber objects as proxies in attempting to understand the conversion of Britain to Christianity.

Table 2.1 provides a breakdown of the objects analyzed in this thesis. The 82 jet/JLM pieces include artifacts such as beads, cross pendants, seals, personal adornments, and game pieces. There are 121 amber artifacts in the data set consisting mostly of beads and bead fragments. However, some personal adornments such as brooches, as well as a number of artifacts made from other materials that are decorated with amber, are also included.

Table 2.1 Number of jet/JLM and amber artifacts by form.

Jet/JLM Artifact Types	Number (%) of Artifacts
Bead/Bead Fragments	54 (66%)
Cross Pendant	14 (17%)
Pin	3 (4%)
Seal	3 (4%)
Bangle	1 (1%)
Chess Piece	1 (1%)
Crucifix Display	1 (1%)
Decoration	1 (1%)
Disc	1 (1%)
Handle	1 (1%)
Ring	1 (1%)
Spindle Whorl	1 (1%)
Total	82 (39% of total sample)
Amber Artifact Types	Number (%) of Artifacts
Bead/Bead Fragments	110 (91%)
Brooch Inlays	7 (6%)
Miscellaneous Inlays	2 (2%)
Amulet	1 (.5%)
Disc	1 (.5%)
Total	121 (58% of total sample)
Overall Artifact Total	208

The analysis presented here focused on the qualitative aspects of this data set. A simple stylistic inventory of the forms of the objects made of jet/JLM and amber during the time frame of the study was carried out in the first phase of the analysis to identify any changes in the types of artifacts made from these raw materials, including possible changes in their function. Next, the contexts of the jet/JLM and amber artifacts over time were investigated to determine whether changes in the ways in which these objects were used were impacted by larger social, economic, and ideological transformations. Finally, possible temporal changes surrounding the use of these two materials were examined, specifically changes in the use and popularity of jet/JLM and amber over time. This included an investigation of the possible reasons for the apparent drastic drop in popularity of jet/JLM and amber objects between the pre-Christian and Conversion period (Table 2.4).

Artifact Types

The first phase of this study investigated possible changes in the forms of objects made from these materials over time. The artifacts included within the data set were split into categories based on their function. These categories included beads and bead fragments, personal adornments, decorative inlays, personal identification, tools, and recreation (Table 2.2).

Table 2.2 Number of jet/JLM and amber artifacts by form group.

Jet/JLM Artifact Types	Number (%) of Artifacts
Beads/Bead Fragments	54 (66%)
Personal Adornment	20 (24%)
Personal Identification	3 (4%)
Decorative Inlays	2 (2.5%)
Tools	2 (2.5%)
Recreation	1 (2%)
Total	82

Amber Artifact Types	Number (%) of Artifacts
Beads/Bead Fragments	110 (91%)
Decorative Inlays	9 (7%)
Personal Adornment	2 (2%)
Total	121

Beads and Bead Fragments. The term bead refers to an object made of jet/JLM or amber with a central perforation indicating suspension. These beads can be whole or fragmentary, but even when broken the central perforation can be used to classify the object as a bead within the parameters of this project. There are a number of shapes of beads that are common to this time period. Previous studies on Anglo-Saxon beads detail the different diagnostic shapes of these artifacts, focusing mainly on the glass beads produced during this time period (Guido 1999: 13). Most of the beads in the data for this project are thin or thick annular or disc beads (Figures 2.1-2.4). There are other styles as well, such as cylindrical or barrel shaped beads, but the majority belong to the annular or disc bead categories. However, it is important to note that a number of beads in the data set could not be assigned a style due to the absence of descriptions or photographs and they are not included in these totals.

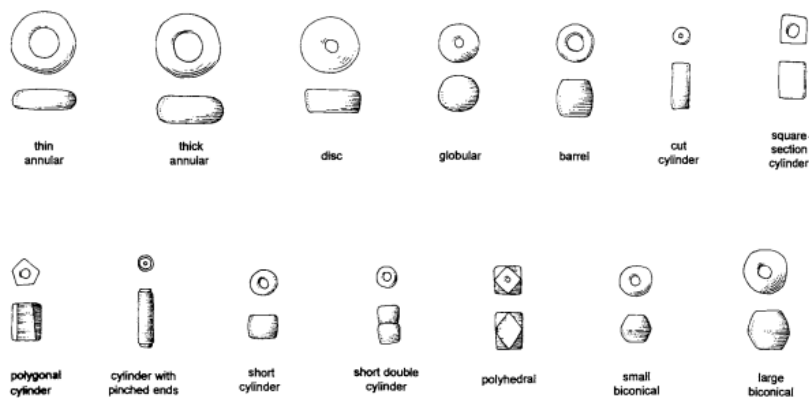


Figure 2.1 Bead styles (Guido 1999: 13).



Figure 2.2: Annular amber beads (1995,0102.104.b) (1995,0102.32) (britishmuseum.org).



Figure 2.3: Annular amber bead (britishmuseum.org).



Figure 2.4 Jet bead (1995,0102.506) (britishmuseum.org).

Personal Adornments. Personal adornments are any item used for personal decoration, such as rings, bangles, pins, and brooches. This category also includes cross pendants (Figure 2.5). While these pendants did have perforations like beads, these items could be worn alone or in combination with other perforated objects and their symbolic significance is obviously of importance here. This led to the placement of these items in the personal adornment category, as they could have been used to express personal religious ideology as well as for their prophylactic qualities by individuals living in early Christian Britain.



Figure 2.5 Jet cross pendant (Pierce 2013).

Decorative Inlays or Attachments. Decorative inlays or attachments are decorations made from jet/JLM or amber that were added to an item made from a different material. Some of these items included small decorations of jet/JLM and amber, such as the jet eyes on a small crucifix display from 11th century England (Williamson 2010: 236) (Figure 2.6). This category includes brooch inlays, which were made of materials such as metal or bone and used as embellishments. This project focuses on the decorative function of the amber and jet/JLM elements rather than the function of the artifact as a whole in the classification process.



Figure 2.6 Crucifix display with eye inlays of jet (A.80-1923) (Victoria and Albert Museum).

Personal Identification, Tools, and Recreation. Some of the objects in the study sample were used for personal identification within a community. Seals were one such form of identification. Pressed into a soft surface such as wax, these seals were carved with decorations or family crests and marked ownership of objects or documents (Figure 2.7) (Nieus 2016: 13). Other items were used as tools, such as spindle whorls and tool handles that were helpful in daily chore tasks like weaving. Some of the jet/JLM and amber artifacts in this data set were also used

for recreational purposes. A game piece made of jet/JLM, most likely used in an early form of chess, was found in Norfolk, dating to the 12th century AD (Figure 2.8, front and back view of piece) (britishmuseum.org).



Figure 2.7 Jet seal with Impression (britishmuseum.org).



Figure 2.8 Jet/JLM chess piece (1987,0601.1) (britishmuseum.org).

Geographic Parameters

A number of selection criteria were utilized in choosing these data points. The geographic focus of this project was England, Scotland, and the Scottish Isles. While Wales and Ireland also made use of jet/JLM and amber artifacts during this time period, they operated under slightly different sociopolitical conditions, and were not influenced by the Anglo-Saxon migrations experienced by the regions included in this study (Seaman 2013: 1). Focusing on England, Scotland, and the Scottish Isles reduced the number of social and cultural pressures that affected material culture expression by controlling for regional variability. These geographic areas were further subdivided by county (Appendices A and B). This was done to investigate possible patterns in the use of jet/JLM and amber materials based on the geographic location of the finds. Figure 2.9 shows the locations in Britain of sites in the study area and Table 2.3 goes into further detail on the sites included in the analysis.



Figure 2.9 Locations of artifacts in data set by county.

Table 2.3 Sites and finds by region and county.

COUNTRY	COUNTY	SITE NAME	# OF JET/JLM ARTIFACTS	# OF AMBER ARTIFACTS
ENGLAND				
	KENT	BREACH DOWN	40	
		BUCKLAND	1	8
		ST. PETER'S TIP	1	
		KING'S FIELD		4
	NORFOLK	THELTON	1	
	YORKSHIRE	RIPON	1	
		BARNSLEY	1	
		STREET HOUSE	3	1
		COPPERGATE	1	
		GISBOROUGH	1	
		PONTEFRACT	1	
		SCARBOROUGH	1	
		WHITBY 1	1	

	WHITBY 2	1	
	WOMBWELL	1	
	SEWERBY	1	15
SURREY	KENLEY	1	
LINCOLNSHIRE	NEAR LOUTH	1	
	WEST LINDSAY	1	
	EAST LINDSAY	1	
WEST SUSSEX	RUSPER NUNNERY	10	14
AVON	BRISTOL	1	
ISLE OF WIGHT	ISLE OF WIGHT		1
NORTHHAMPTONSHIRE	DESBOROUGH		1
	NORTON		1
WEST GLAMORGAN	HEN GASTELL		2
CUMBRIA	CARLISLE		1
SCOTLAND/SCOTTISH ISLES			
BERWICKSHIRE	LAUDER	1	
EAST LOTHIAN	TRAPRAIN LAW	1	
AYRSHIRE	LOCHSPOUTS		
	CRANNOG	1	
	HUNTERSTON		1
EIGG	KILDONAN	2	
ORKNEY	LAMANESS	1	
	WESTNESS		1
STIRLINGSHIRE	DUNIPANCE		1
INVERNESS-SHIRE	CROY		6
ARGYLL	CARN A BROCH		2
DUNVEGAN	IADHARD		58
W.SCOTLAND	W.SCOTLAND		1
SUTHERLAND	BALNAKEILL		1
OUTER HEBRIDES	CNIP		1
PERTHSHIRE	PERTH	1	

Temporal Parameters

The study focuses on the time period between AD 400 and 1200 (Table 2.4). Parameters were set to control for these production dates during database searches excluding any artifacts that were in continual use from previous time periods. It is important to note here that these dates

may be subject to change based on further research on these artifacts. AD400 was chosen as the start date because Roman forces pulled out of the British Isles at that time (Salway 1993; Tomlin 2018). The resulting temporal framework included the development of a pre-Christian British material culture that was influenced by Rome but was not controlled by a Roman presence. AD1200 was chosen as the end point because it is around 500 years after the “conversion” to Christianity during the 8th century (Gilchrist 2013). This provided enough time for the development of a Christian material culture as well as enough time for the people of Britain to start accepting the new religion and incorporate it into their existing way of life. These nine centuries were then split into three subsections, each spanning three hundred years to reveal possible artifact trends from the pre-Christian era (AD400 to AD700) through to the Conversion period (AD700 to AD1000) and on to the post-Conversion period (AD1000 to AD1200), indicated in Table 2.4 below.

Table 2.4 Number of artifacts by time period.

Time Period	Jet/JLM Artifact Counts/Percentages
5th-7th c. C.E. (pre-Christian)	48 (58.54%)
8th-10th c. C.E. (Conversion)	5 (6.10%)
11th-13th c. C.E. (post-Conversion)	29 (35.37%)
Total	82
Time Period	Amber Artifact Counts/Percentages
5th-7th c. C.E. (pre-Christian)	91 (72.80%)
8th-10th c. C.E. (Conversion)	13 (10.40%)
11th-13th c. C.E. (post-Conversion)	17 (13.60%)
Total	121

Contextual Parameters

The contexts of the finds span several categories, including burials, settlement sites, religious buildings, and middens. Burial contexts contain human remains and associated objects.

Settlement site contexts include clusters of buildings that show domestic attributes, such as hearths and other household features. Religious buildings are areas designated for some kind of religious practice, whether that involved Christian worship or pre-Christian religious practices. While the religious contexts in this project included graves recovered within major religious structures, the focus of these particular burials was their relationship to the Christian religion and the buildings where the new religion was practiced. Therefore, these burials were grouped under the general category of religious contexts. Midden contexts reflect discard behavior, often including a wide range of artifacts that appear to be broken. A few of the finds have unknown contexts, as they were discovered during surveys and were returned to the finder after documentation. However, these “Unknown” finds were dated using relative and absolute measures, meeting the chronological selection criteria of this project. These different contexts were used to determine the use of these items to identify any trends in how these materials were used through time.

Table 2.5 Number of jet/JLM and amber artifacts by context.

Jet/JLM Artifact Contexts	Number (%) of Artifacts
Burial	8 (24%)
Midden	3 (9%)
Religious	7 (21%)
Settlement	3 (9%)
Unknown	13 (38%)
Total	34 (57% of total)
Amber Artifact Contexts	Number (%) of Artifacts
Burial	14 (54%)
Midden	0
Religious	2 (8%)
Settlement	7 (26%)
Unknown	3 (12%)
Total	26 (43% of total)
Overall Context Total	60

Expectations

The expectation was that the prophylactic use of jet/JLM and amber artifacts would continue but that the forms and contexts changed to reflect the newly adopted Christian faith. Jet/JLM and amber raw materials might still have been used to create personal lived religious material culture, but the morphology of that lived materiality would be expected to change. I anticipated that amber artifacts would continue to present mostly as beads, but that there would be an increase in personal adornments like brooches in later centuries. One of the most significant changes I anticipated was that amber beads would be used in rosaries rather than as personal ornaments with prophylactic qualities. This might be accompanied by a change in context, since amber and glass beads are frequently found in women's and children's graves in Iron Age Europe and are assumed to have served mainly as amulets (Gilchrist 2008: 141). I anticipated that jet/JLM objects would take a slightly different turn through time, appearing more frequently as beads and amulets in pre-Christian contexts and more often in crucifixes and personal seals after the introduction of Christianity. Again, a gendered element was anticipated in this shift from women and children's graves to male burials and religious contexts. The move to seals could suggest that artifacts made from "magical" materials shifted in use to represent kinship and lineage rather than religious traditions. Together, these anticipated results would suggest that artifacts made from jet/JLM and amber continued to have religious significance in the lives of the people of Britain but that the social and functional contexts reflected the shift to Christian religious traditions and a new focus on familial associations.

Chapter 3: Analysis and Results

The results of the comparative analysis of jet/JLM and amber objects outlined in the preceding chapter are presented here, with particular attention paid to any evidence for changes in the forms of the artifacts, their prevalence by geographic location, and contextual changes that may have occurred over time.

Chronological Changes

An initial analysis revealed changes in the use of jet/JLM and amber over time (Table 2.4). Jet/JLM and amber objects appear to be most common during the pre-Christian Period. Both materials exhibited a drastic decline due to the drop in artifacts placed in burials as a whole during the Conversion period, with an apparent increase occurring during the post-Conversion Period. While the use of jet/JLM and amber did not achieve pre-Conversion Period levels after experiencing a major decline during the Conversion Period, jet/JLM objects appear in greater numbers in the post-Conversion Period than amber (35% of the sample compared to 14%). There is also a difference in the trends of material use in the different time periods; however, because these were established arbitrarily, the possibility that these patterns are random cannot be ruled out. To partially counteract this potential skewing effect, impacts on the sources of the raw materials will be considered below. For example, amber artifacts were more plentiful during the pre-Conversion and Conversion Periods, while jet/JLM artifacts were more plentiful during the post-Conversion Period. Only one of the possible reasons for this difference in the use of jet/JLM and amber was the introduction of a religious tradition that viewed this material as linked to previous pagan belief systems. Another is the decrease in grave goods in Christian burials, which were more poorly outfitted than before the Conversion Period. During the initial analysis of the historical contexts of the temporal phases it was revealed that in the middle of the Conversion

Period, the Christian church in Britain underwent a significant period of reform, including reforms to their material culture (Leyser 1997). This was done to bring the British Church, which exhibited a number of regional variations, in line with the continental European Church tradition (Leyser 1997). This prompted adjustments to the temporal framework of this project. Instead of the three separate time periods previously defined based on arbitrary time spans, two time periods were used in subsequent analyses: the pre-Conversion Period (AD400 – AD800) and the post-Conversion Period (AD800 – AD1200). Table 3.1 reflects the change in artifact counts and percentages of this new chronological breakdown. Significantly, the patterns are similar to those seen in the initial three-phase analysis, reflecting the fact that the vast majority of artifacts of jet/JLM and amber materials were recovered from contexts dating to the earlier centuries of the pre-Conversion Period. Amber was more common in the pre-Conversion Period, while jet/JLM artifacts appear more often in the post-Conversion Period. It is also worth noting that artifacts made of jet/JLM exhibit less of a difference in artifact percentages between the pre- and post-Conversion Periods, while amber exhibits a more drastic shift in artifact percentages between the two periods. A graphic comparison of the two temporal patterns is presented in Figures 3.1 and 3.2 below.

Table 3.1 Jet/JLM and amber artifact counts over time (revised).

Time Period	Jet/JLM Artifact Counts/Percentages
5th – 8th c. C.E.	50 (61%)
9th – 13th c. C.E.	32 (39%)
Total	82
Time Period	Amber Artifact Counts/Percentages
5th – 8th c. C.E.	95 (78.5%)
9th – 13th c. C.E.	26 (21.5%)
Total	121

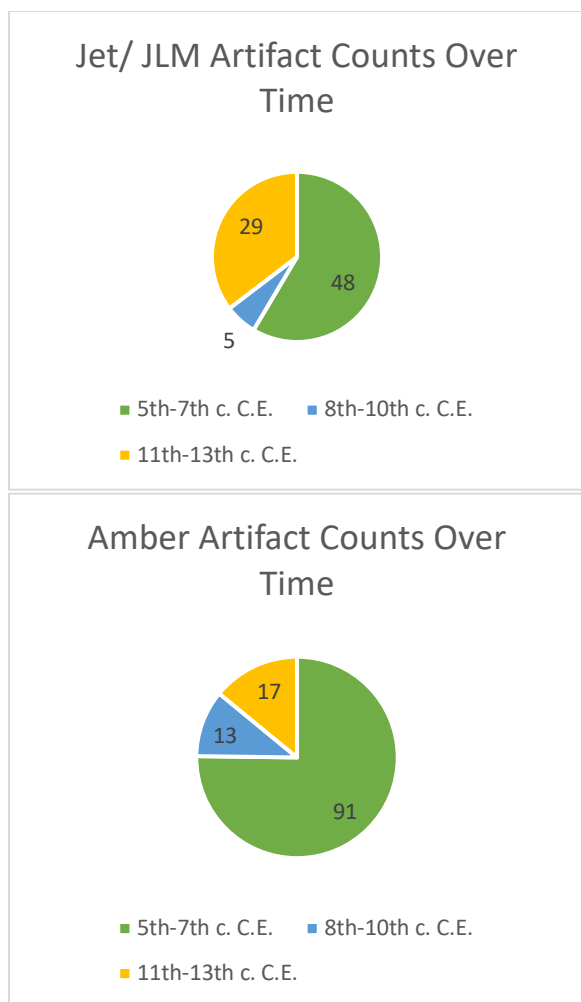


Figure 3.1 Jet/JLM and amber artifacts by count.

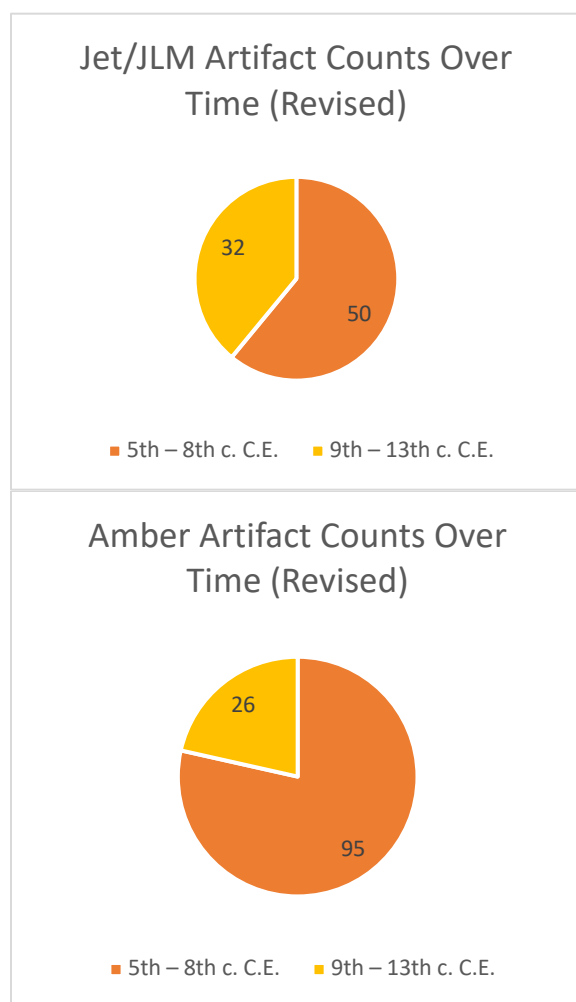


Figure 3.2 Jet/JLM and amber artifacts by count (revised).

Changes in Artifact Prevalence by Type

An initial analysis was carried out to investigate possible changes in the types of artifacts made from jet/JLM and amber over time and through space. This initial analysis focused on the differences in the prevalence of different artifact types made of these materials (Table 3.2).

Based on this initial analysis, there was greater diversity in the types of artifacts made of jet/JLM, with 12 types, compared to amber, with 5 types. Both the jet/JLM and amber data sets included large numbers of beads and bead fragments. All other types of jet/JLM and amber

artifacts had a drastically lower count. Possible explanations for this focus on beads are discussed further in the next chapter.

Table 3.2 Jet/JLM and amber artifact counts by type.

Jet/JLM Artifact Types	Count
Bead/Bead Fragments	54 (66%)
Cross Pendant	14 (17%)
Pin	3 (4%)
Seal	3 (4%)
Bangle	1 (1%)
Chess Piece	1 (1%)
Crucifix Display	1 (1%)
Decoration	1 (1%)
Disc	1 (1%)
Handle	1 (1%)
Ring	1 (1%)
Spindle Whorl	1 (1%)
Total	82
Amber Artifact Types	Count
Bead/Bead Fragments	110 (91%)
Brooch Inlays	7 (8%)
Miscellaneous Inlays	2 (2%)
Amulet	1 (0.8%)
Disc	1 (0.8%)
Total	121

An analysis of the percentages of the different artifact types was conducted using pie charts to visualize the difference in the forms of these artifacts (Figures 3.3 and 3.4). Artifacts made of jet/JLM include a much larger percentage of beads and bead fragments, accounting for 66% of the total jet/JLM objects (Figure 3.2). The next most common form of jet/JLM artifacts was cross pendants, encompassing 17% of the total data set. Pins and personal seals make up the next most common types, each representing 4% of the data set. Chess pieces, decorations, spindle whorls, handles, rings, bangles, discs, and crucifix displays are single artifact items, each encompassing around 1% of the total data.

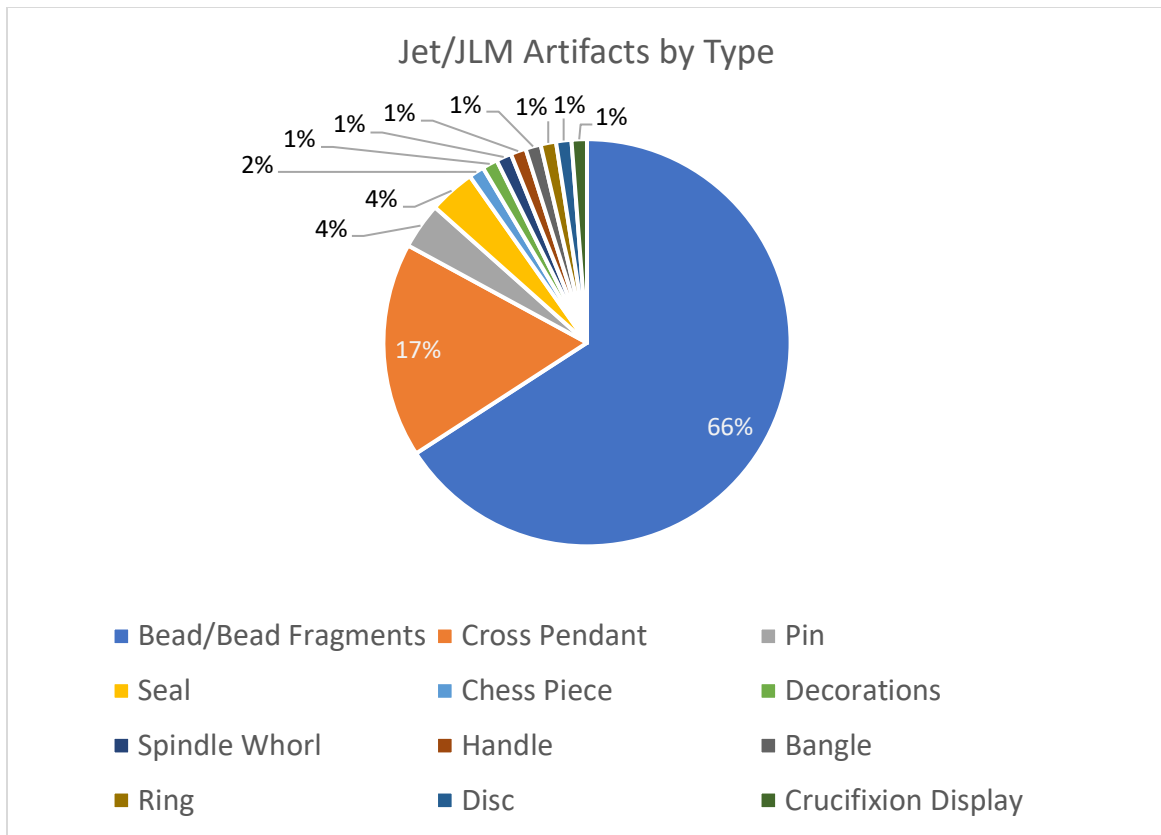


Figure 3.3 Jet/JLM artifact prevalence by type (n=82).

The amber artifact data set exhibited a similar artifact form distribution but exhibited less variability in the individual forms of the artifacts (Figure 3.4). Beads and bead fragments made up 91% of the total data set and were the most common form of amber artifacts. The next most common artifact type was brooch inlays, making up 5% of the total amber artifact data set. Miscellaneous inlays, discs, and amulets make up the smallest percentages, with only a single artifact for each type accounting for around 1% of the total data set. While these admittedly limited data sets suggest that trends in the different forms of the jet/JLM and amber artifacts may be present, the analysis had a number of issues. The most problematic was the presence of too many individual type categories with only a single artifact representing that particular type of object.

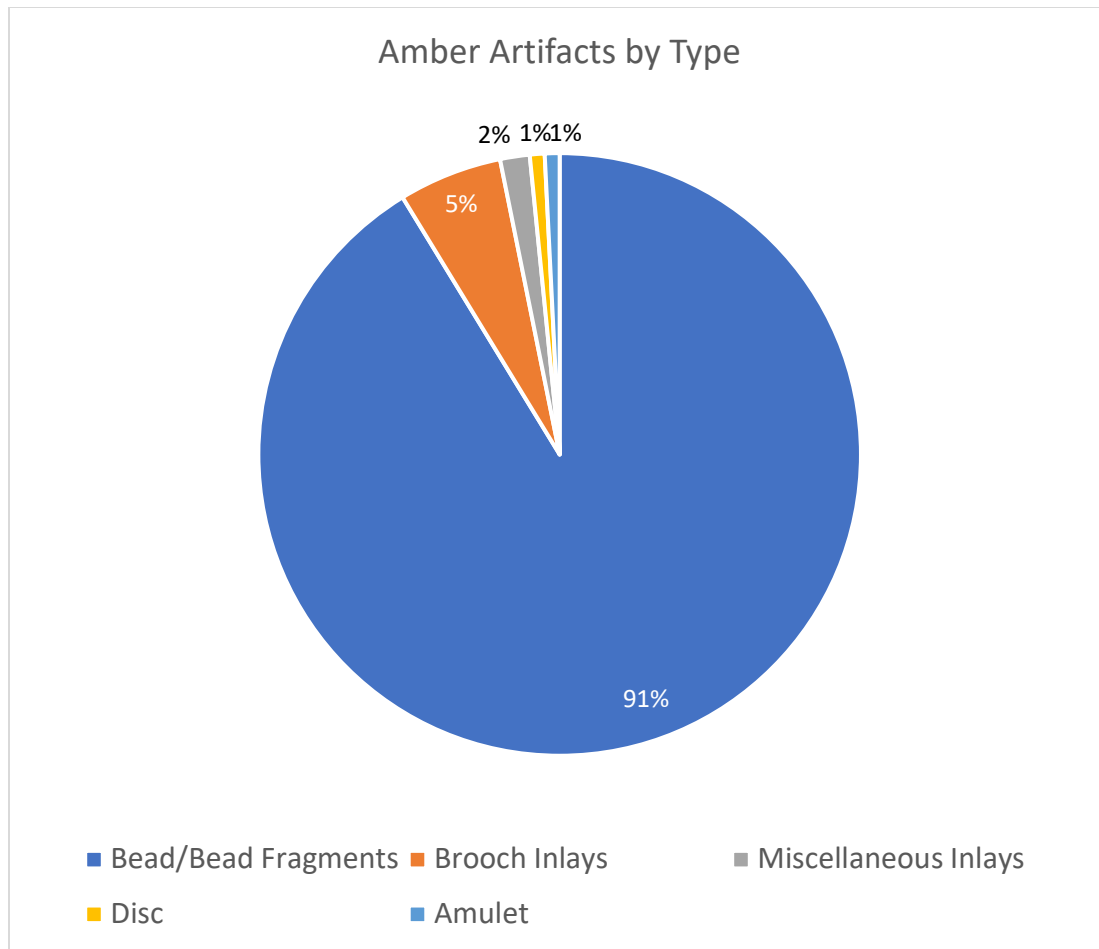


Figure 3.4 Amber artifacts by type (n=121).

This prompted the creation of form groups, which were created based on the presumed function of the object types. This made it possible to create uniform categories for jet/JLM and amber, making a comparative analysis of the base forms for each material possible. These type groups include beads and bead fragments, personal adornment, personal identification, decorative inlays, work, and recreation. Further explanations of these categories can be found above in the Methods Chapter.

Beads continued to represent the largest object category for artifacts made of jet/JLM (Figure 3.5). The second largest, at 24%, was personal adornment. The previously vast difference between beads and all other artifact types was drastically reduced when the data were reanalyzed

based on form groups, but beads and bead fragments were still much more common than all other form groups. Items of personal identification account for 4% of the data set and decorative inlays follow closely at 3%. Tools (2%) and recreation (1%) make up the smallest percentages, with only a small number of artifacts representing each group.

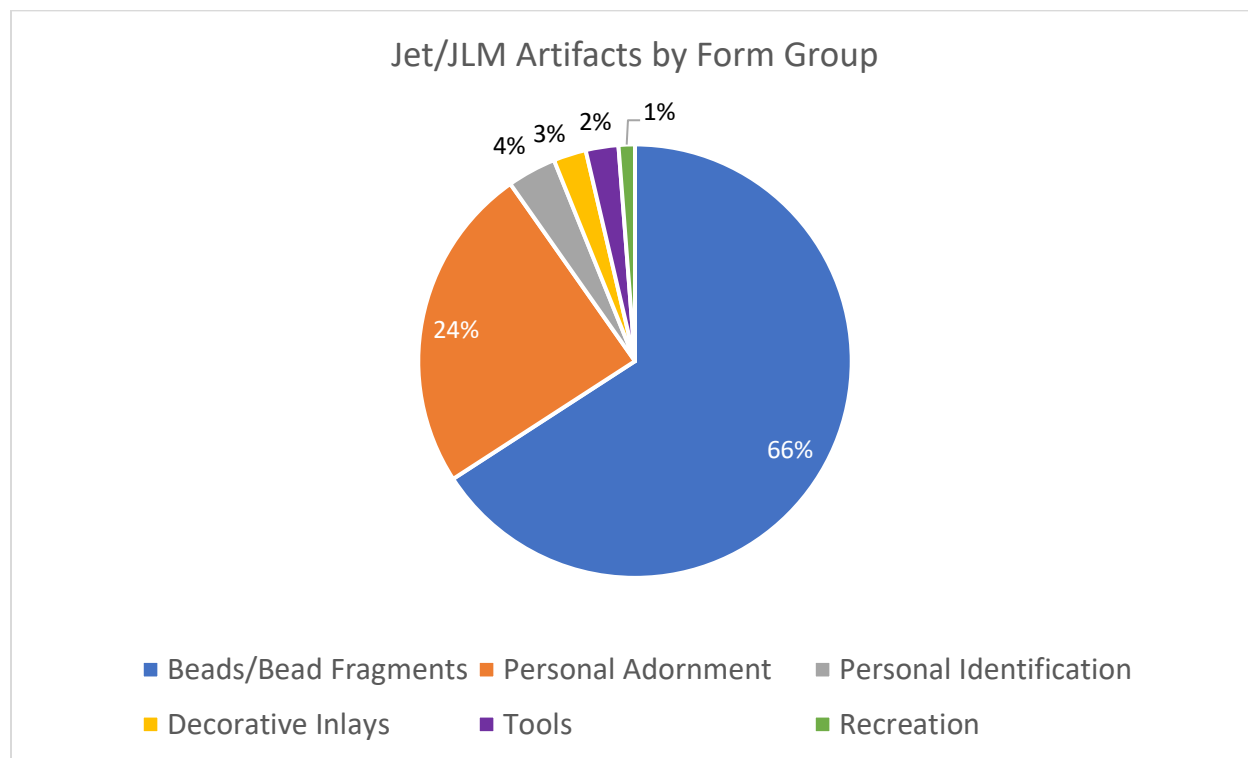


Figure 3.5 Jet/JLM artifacts by form group (n=82).

Amber artifacts still exhibited a smaller diversity of forms than artifacts of jet/JLM, being represented in only three of the six form groups (Figure 3.6). Beads and bead fragments continue to dominate the amber data set at 91%. However, there is a difference between amber and jet/JLM in the second largest form group represented in the data set. While jet/JLM artifacts were especially common as personal adornment, the amber artifacts exhibited a higher percentage of decorative inlays (7%), mainly because they seem to have been used more extensively to decorate brooches. Following these inlays is the personal adornment category, which makes up the remaining 2% of the data set.

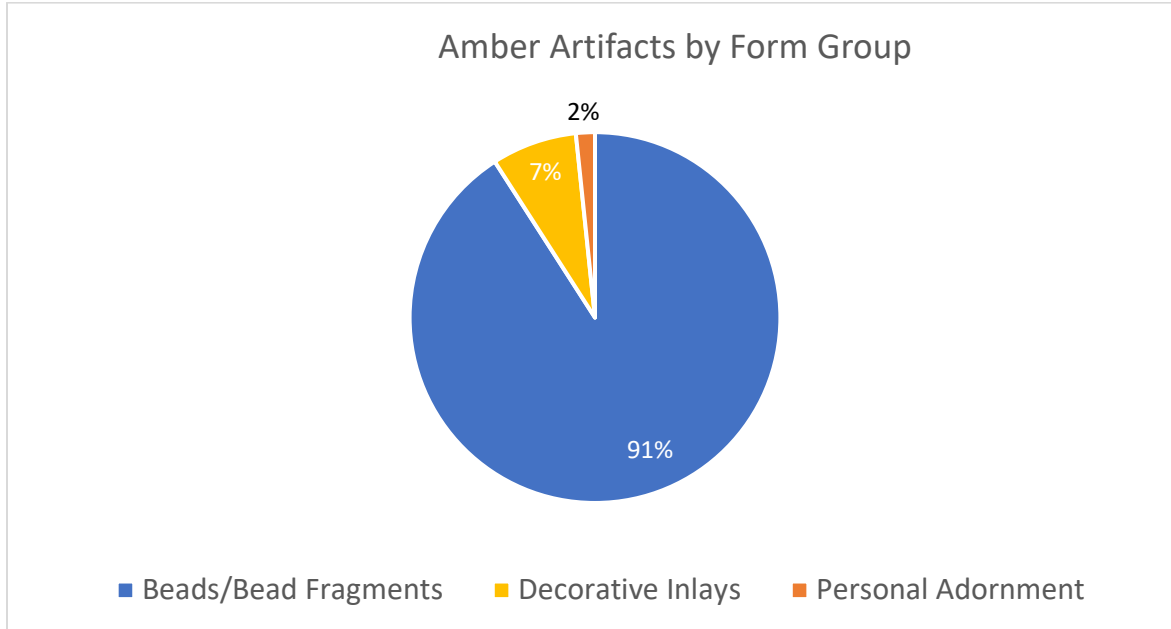


Figure 3.6 Amber artifacts by form group (n=121).

Defining the different form groups also made it easier to investigate how the use of jet/JLM vs. amber changed over time. Figure 3.7 demonstrates these changes in the jet and jet-like materials data set. While the pre-Conversion Period had larger numbers of artifacts, mostly beads and bead fragments, these earlier artifacts are found in a smaller number of form groups (Beads and Bead Fragments, Personal Adornment, and Work). The artifacts from the post-Conversion Period, on the other hand, are represented by a larger number of form groups with artifacts in five out of six of the type groups. Figure 3.8 shows the breakdown of the amber data set. A major difference between amber and jet/JLM artifact distributions is the smaller number of type groups for the amber artifacts compared to the jet/JLM artifacts. Amber artifacts from the pre-Conversion Period consist mainly of large numbers of beads and bead fragments. While decorative inlays and and personal adornments of amber are found in this time period, they are much less common than the beads and bead fragments. The post-Conversion Period exhibited a

smaller diversity of artifact form groups, with beads/bead fragments, personal adornments, and decorative inlays the only categories still represented. The number of decorative inlays in the post-Conversion Period is slightly higher than in the pre-Conversion Period, however.

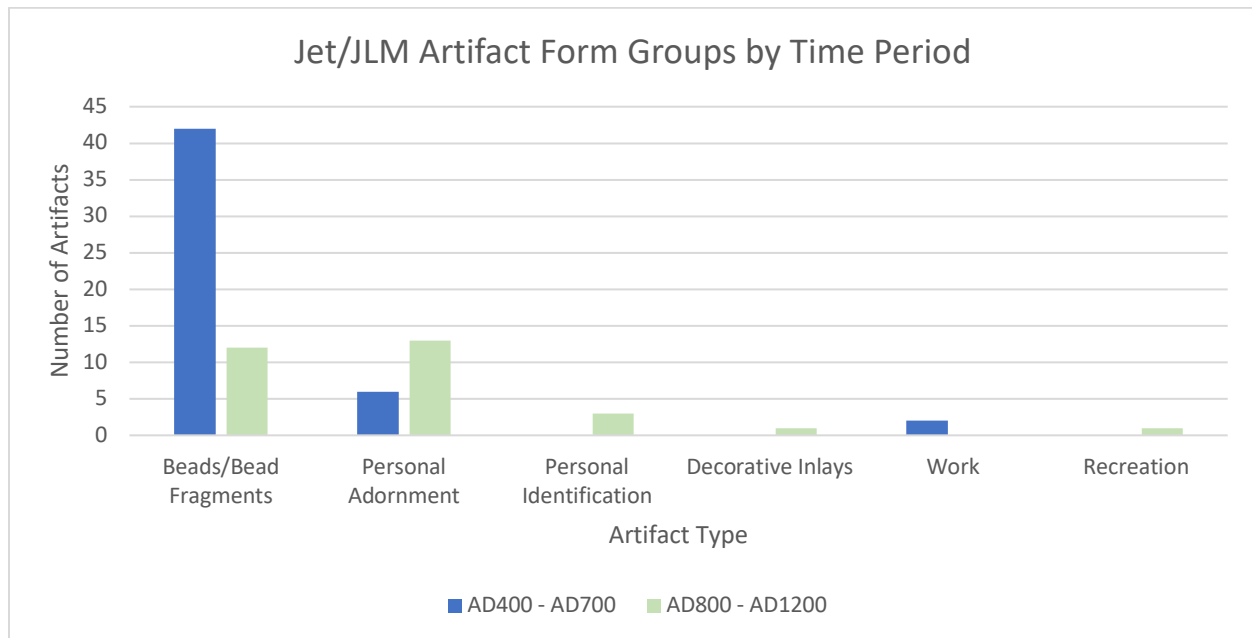


Figure 3.7 Jet/JLM artifact form groups by time period.

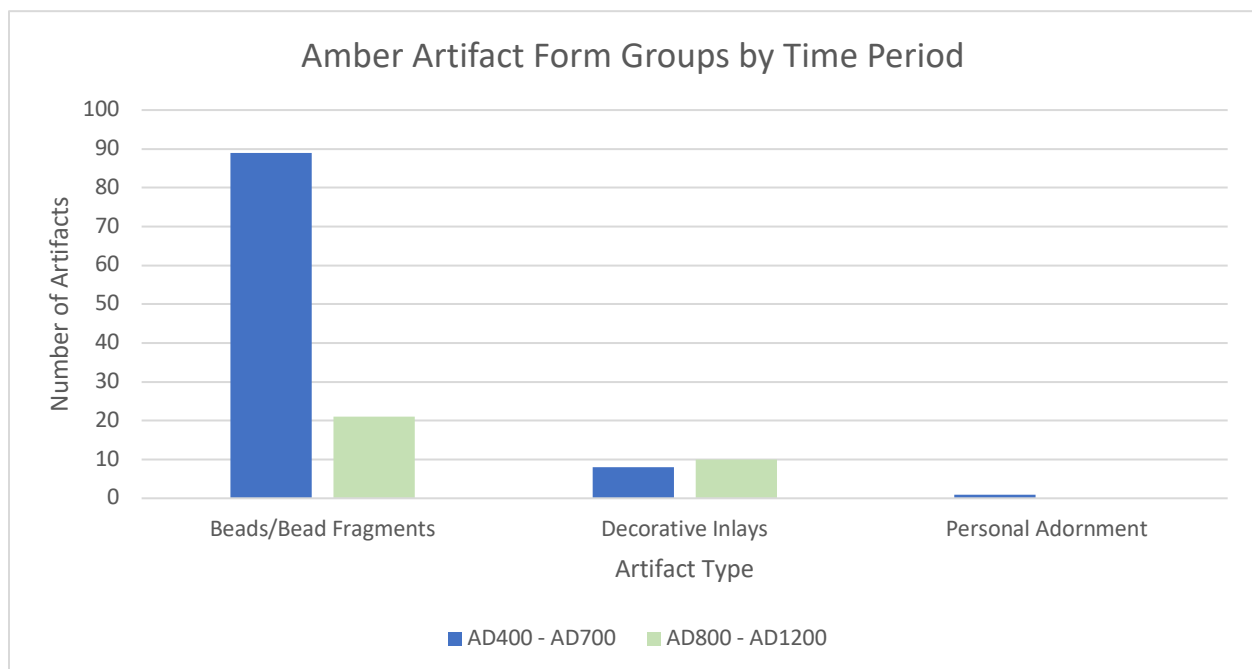


Figure 3.8: Amber artifact form groups by time period.

Geographic Changes

The data sets for jet/JLM and amber were also analyzed for any evidence of changes in prevalence by region within the geographical parameters of the data set: England, Scotland, and the Scottish Isles. For this part of the analysis, artifacts from Scotland and the Scottish Isles were combined into a single group. The main reason for this was to reduce the number of geographic categories, providing each category with enough data points for an appropriate comparison between the two regions. There is also a general lack of historical data for many of the Scottish Isles, making it difficult to understand the political, social, and cultural differences between the Scottish Mainland and the Isles during this time period (Clancy 2010). Therefore, the historical context of the Scottish mainland was used as a proxy for the Isles by combining the artifacts from the Scottish Mainland and the Isles into a single category for the purposes of this analysis. Jet/JLM use in England showed a general downward trend over time (Figure 3.9). While this particular material was more popular overall in England than in Scotland, it exhibited a steep decrease in use during the transition from the pre-Conversion Period to the post-Conversion Period. This disparity could be due to accessibility of raw materials, which is further discussed in the following chapter. Contrariwise, Scotland showed an increase in the presence of artifacts made of jet and jet-like material over time. Compared to the number of jet and jet-like artifacts from England, this number is small and does not surpass the number of objects of jet and jet-like material from England, despite the latter's steep decline following the introduction of Christianity.

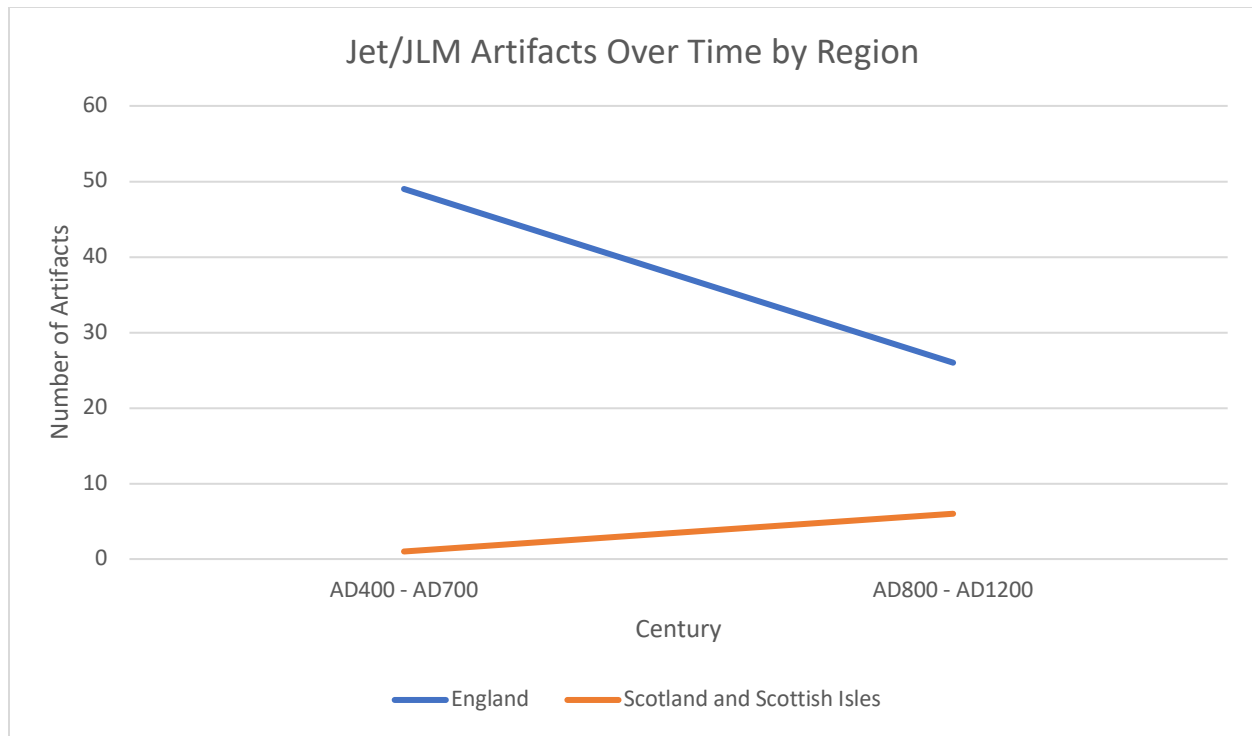


Figure 3.9 Jet/JLM artifacts over time by region.

Looking more closely at the time periods individually, jet/JLM artifacts appear to be more common in England, with nearly 50 such objects (98% of the total objects of this material dating to the pre-Conversion Period), than Scotland, with just 2% in the pre-Conversion Period (Figure 3.10). While jet/JLM artifacts are still more common in England during the post-Conversion Period, the difference between the two regions is less pronounced than in the previous period. In the sample analyzed for this thesis, 81% of the jet/JLM artifacts from the post-Conversion Period were recovered in England, while 19% of the jet/JLM artifacts from Scotland are from this period.

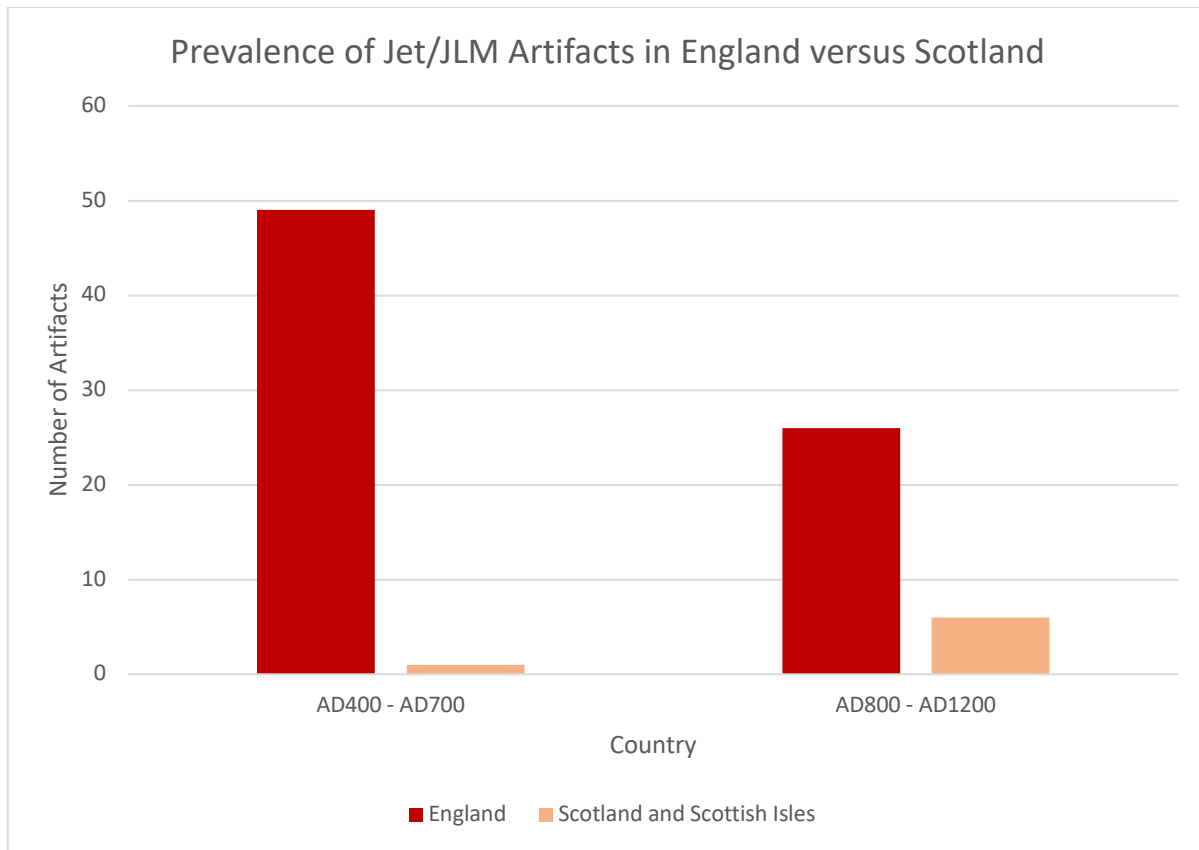


Figure 3.10 Prevalence of Jet/JLM artifacts in England versus Scotland.

Amber artifacts exhibit different trends over time than their jet/JLM counterparts (Figure 3.11). When comparing the two regions, both materials exhibit a general decline in use over time. England had a more gradual decline, while Scotland's decline in amber artifacts is more dramatic. Compared to the jet/JLM artifacts, amber is initially more popular in Scotland than in England. However, England exhibits an increase in the prevalence of amber artifacts during the post-Conversion Period, slightly overtaking Scotland.

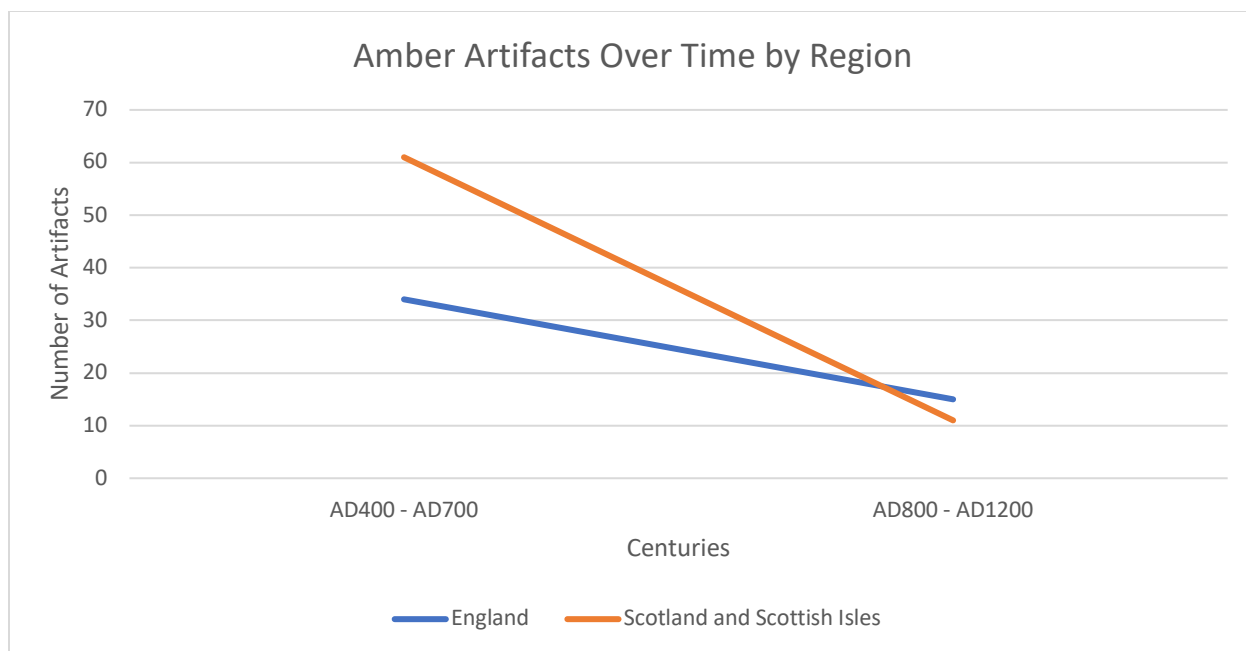


Figure 3.11 Amber artifacts over time by region.

The differences between Scottish and English amber artifact prevalence is even more clear when the artifact counts are compared for each of the time periods (Figure 3.12). During the pre-Conversion Period, there is a noticeable difference between Scottish and English amber prevalence, with nearly 64% of the total amber artifacts recovered in Scotland during this time period compared to only 36% of the amber artifacts recovered in England. During the post-Conversion Period, the situation is reversed and amber appears to be more common in England than in Scotland, with 58% of the sample coming from sites in England and 42% found in Scotland. In contrast to the preceding period, the number of amber artifacts from England was greater than that from Scotland during the post-Conversion Period, with a difference of 16%, as compared to the 28% difference during the pre-Conversion Period.

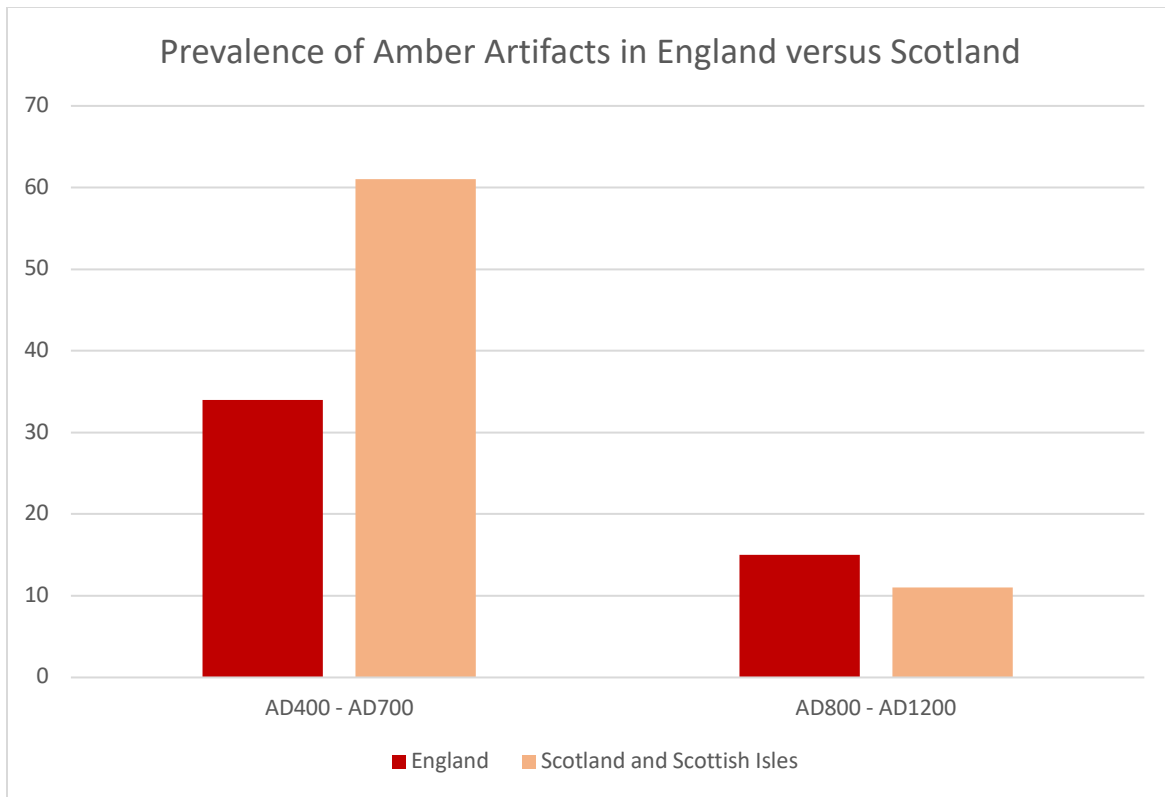


Figure 3.12 Prevalence of amber artifacts in England versus Scotland by time period.

Changes in Context

The data sets were also analyzed to investigate any changes in the contexts of these finds, including possible changes in social function of the artifacts. An initial analysis of the different contexts was carried out to define the different contexts of these finds (Figure 3.13). The jet/JLM artifacts were mostly recovered from Unknown contexts, with 38% of the jet/JLM data set recorded as isolated finds or without a clear archaeologically defined context. Most of the pieces were returned to the finder after being recorded. Burials make up the next largest category, with 23% of the the data set coming from this type of context. Religious contexts make up 21% of the data set and Middens and Settlements are represented by 9% each.

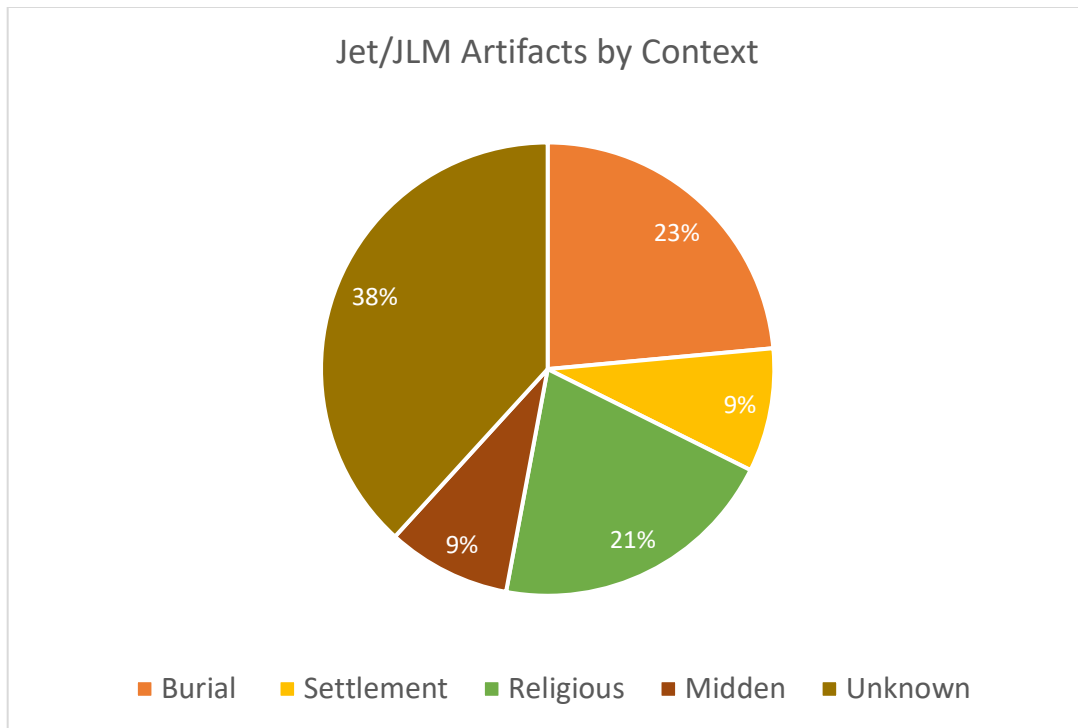


Figure 3.13 Jet/JLM artifacts by context (n=82).

Amber artifacts exhibit a different distribution of contexts than jet/JLM artifacts (Figure 3.14). Burials comprise the majority of amber artifacts in this data set, representing 54% of the amber artifacts recorded in this project. Settlements make up the next largest group, with 27% of the artifacts falling into this category. Unknown contexts account for 11% of the amber data set, followed by Religious contexts with 8% of the data set. None of the amber artifacts in the data set came from Middens.

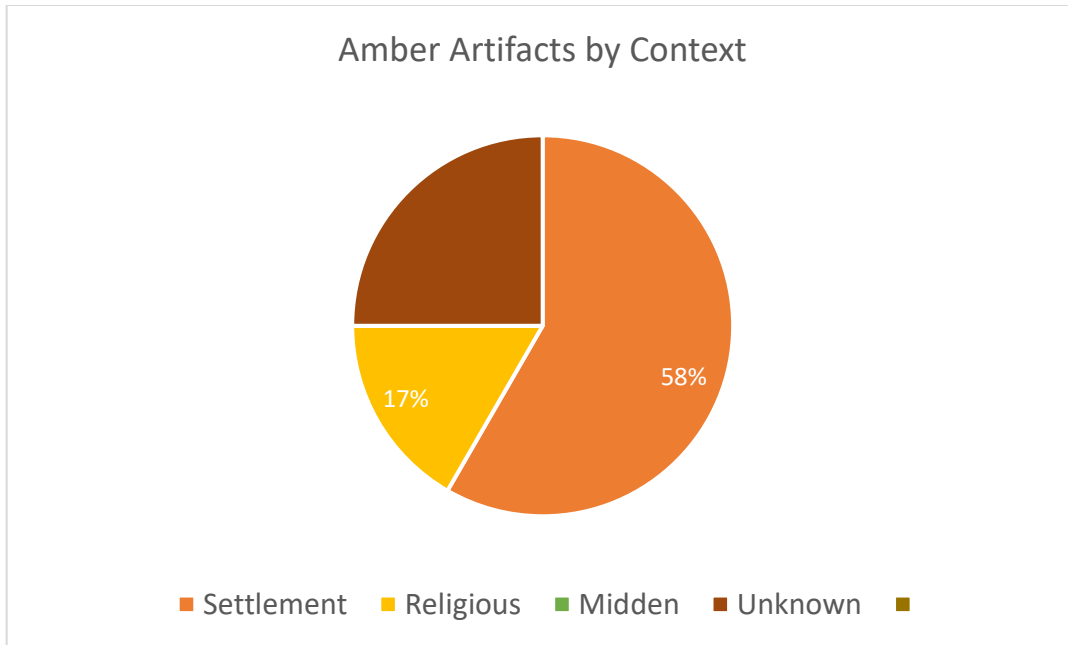


Figure 3.14 Amber artifacts by context (n=121).

Additional analysis was carried out to determine how these contexts changed over time. Jet/JLM artifacts exhibited a number of temporal changes in these contexts (Figure 3.15). Burials were the most common context for the pre-Conversion Period jet/JLM material, with 92% of the total number of these artifacts coming from this context category. During the post-Conversion Period, Religious contexts produced the highest percentage of jet artifacts, with 50% of the data falling into this category. While the pre-Conversion Period yielded a larger number of artifacts in total, the post-Conversion Period exhibited a greater diversity of contexts, with at least one artifact in each of the five contextual categories. The pre-Conversion Period only had artifacts in three of the five categories: Burial, Settlement, and Unknown.

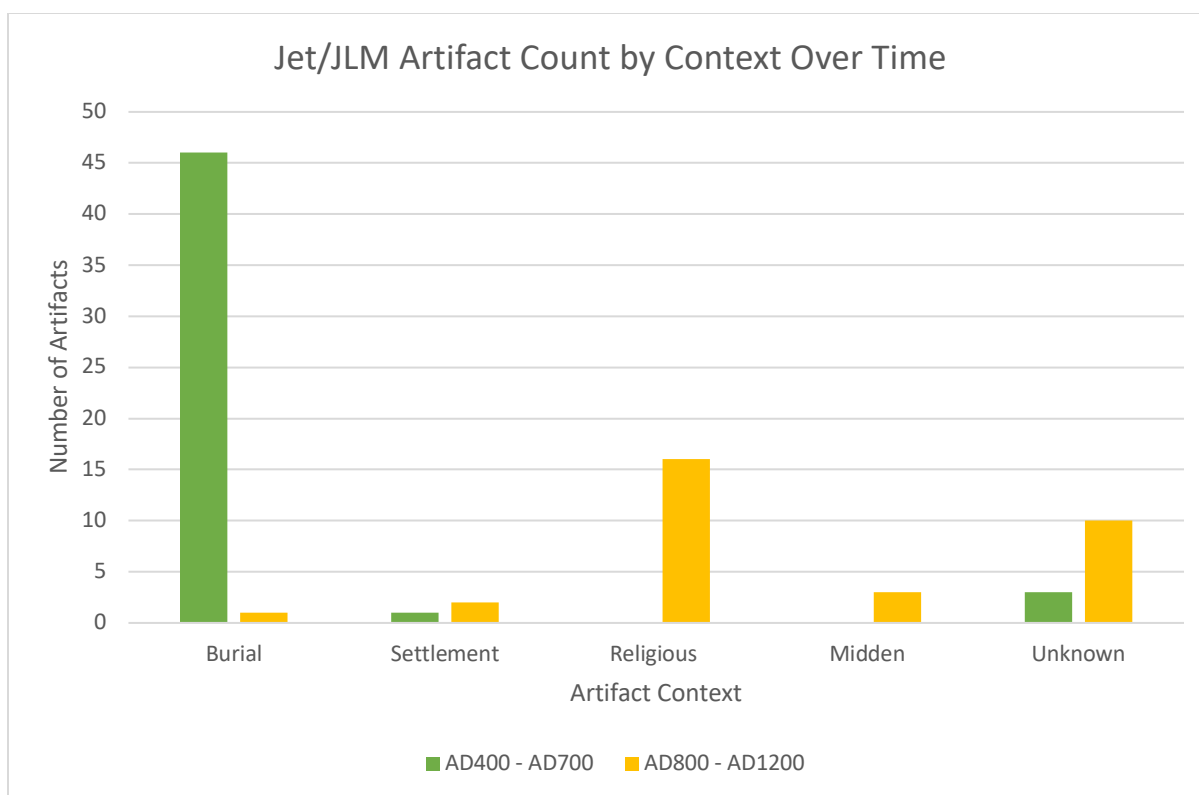


Figure 3.15 Jet/JLM artifact count by context over time.

The context data on amber artifacts exhibits some differences when compared to jet/JLM objects (Figure 3.16). During the pre-Conversion Period, Settlements had the highest percentage of artifacts, which accounts for 63% of the total data set for this time period. Like their jet/JLM counterparts, Religious contexts had the most artifacts of the post-Conversion Period, encompassing 56% of the total number of artifacts from this time period. Also like artifacts made from jet/JLM, there is a difference in the number of contexts with amber finds between the pre- and post-Conversion Periods. The amber artifacts recovered from pre-Conversion Period contexts are represented in only three of the five contextual categories (Burial, Settlement, and Unknown), while the post-Conversion Period has artifacts in four of the five categories (Burial, Settlement, Religious, and Unknown). No amber artifacts were found in Middens.

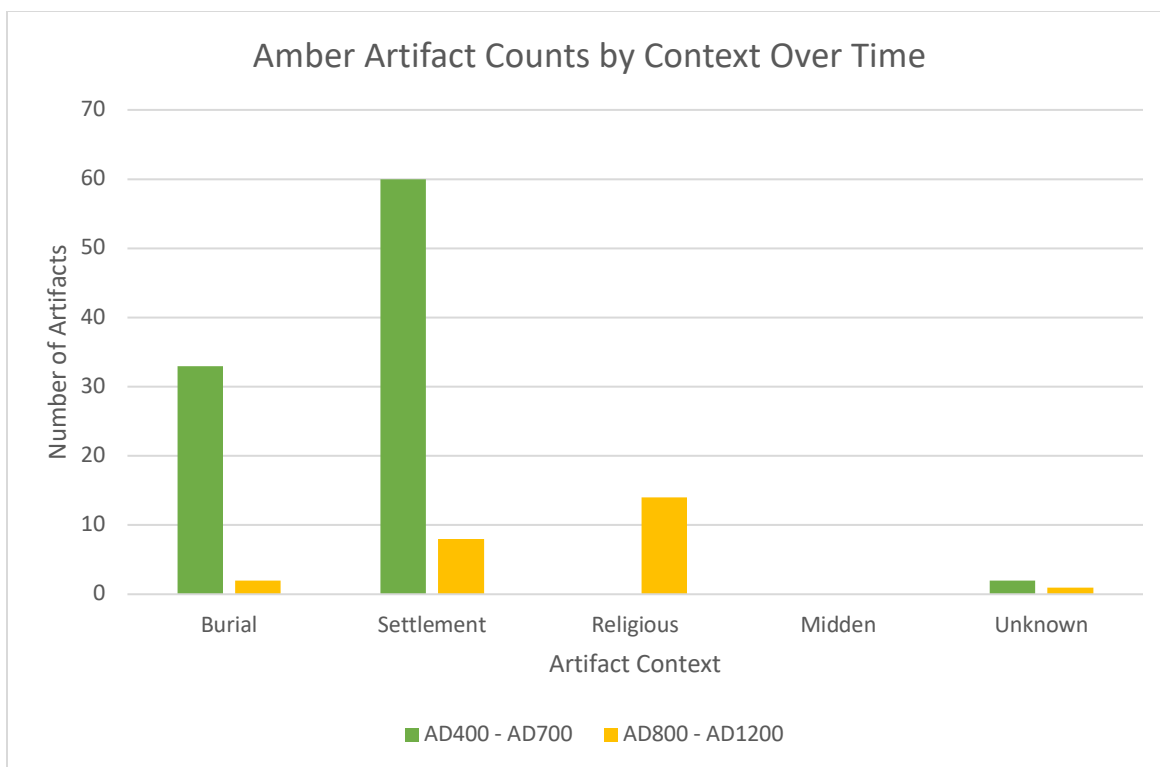


Figure 3.16 Amber artifact contexts by time period.

The jet/JLM and amber artifact data were also analyzed for any patterns in the types of artifacts found in the different context groups. To do this, the different form groups were analyzed by the context of the various finds (Figure 3.17). Beads/Bead Fragments were most often recovered from Burial and Settlement contexts, comprising 44.5% and 38.4% respectively of the total Bead/Bead Fragment data. This artifact form group was also recovered from Religious and Unknown contexts but in significantly lower numbers, with Religious contexts making up 15.2% of the total data set and 1.8% of the beads and bead fragments coming from Unknown contexts.

Personal Adornments were recovered from the largest variety of contexts, with artifacts recovered from all five of the possible context categories. Personal Adornments also exhibited the least variability between the number of artifacts found in each context. Burial contexts accounted for 30.4% of the personal adornments while 26.1% were recovered from Religious

contexts. Finds with Unknown contexts make up 17.4% of the Personal Adornment data set and both Settlement and Midden contexts were represented by 13% each of the data set.

Decorative Inlays were found in Burial (20%), Settlement (40%), and Unknown (40%) context categories only. Tools were found in two of the context categories: Settlement and Unknown, representing 50% each of the total data. Items utilized in Personal Identification were only found in Unknown contexts (100%), mainly recovered by local residents and returned to the finder after documentation. Recreational artifacts came from an unknown context only (100%). The implications of these changes in form, function, and context are further discussed in the following chapter.

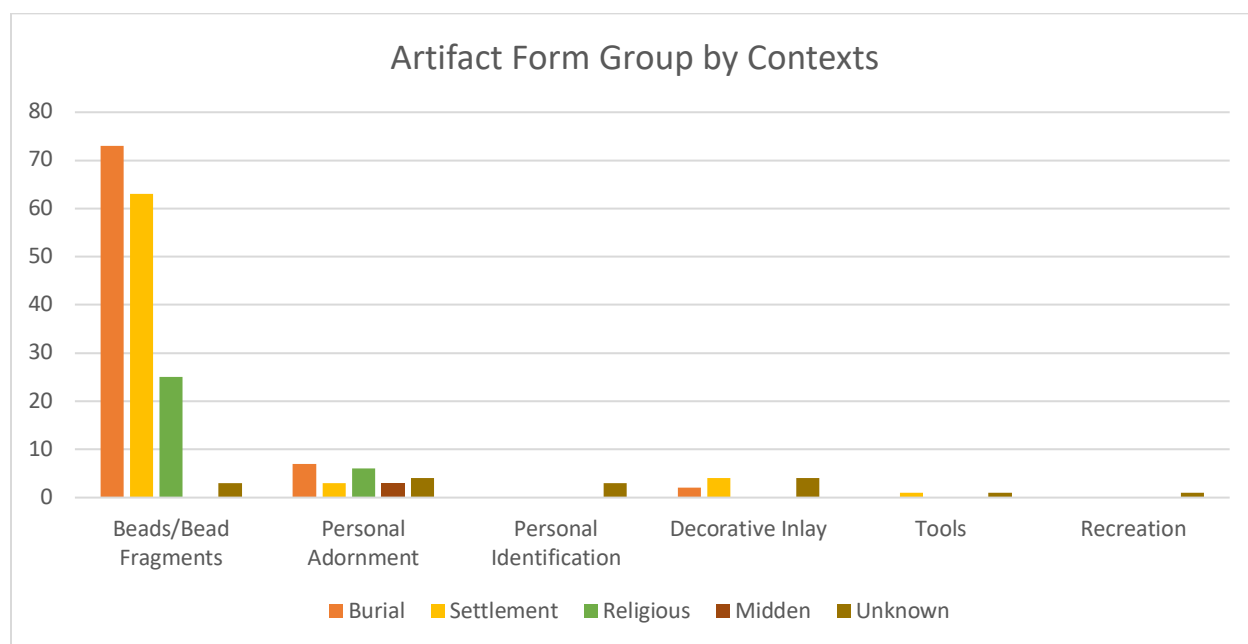


Figure 3.17 Artifact form groups by context.

Summary

Overall, the jet/JLM and amber artifacts from the Christian conversion of Great Britain (AD400 – AD1200) were produced in a number of different forms, but represented a smaller number of groups when it came to function. These artifacts were used throughout the

conversion of Britain to Christianity, but were more commonly found in the pre-Conversion Period (AD400 – AD700). Jet/JLM was a more popular choice in England during this time while amber was more popular in Scotland. These artifacts spanned a number of depositional contexts, but were more often found in burials or religious contexts.

Chapter 4: Discussion and Conclusions

Research Questions

The research aims of this project were to investigate whether and how jet/JLM and amber objects in Britain were impacted by the religious transformations represented by the conversion of the population to Christianity. The first set of research questions dealt with the markers of lived syncretic religious material culture. These included: What archaeological markers might serve as a proxy for tracking the emergence of a syncretic religious system? Do the forms and functions of jet/JLM and amber objects, two materials believed to have had magical properties in pre-Christian religious contexts based on their use contexts, display archaeologically visible changes that could indicate Christianization? Are there observable patterns in the types of objects made and/or decorated with jet and amber in pre-Christian material assemblages as compared to post-Conversion ones?

The secondary research questions expanded on these ideas by investigating whether and how the above-mentioned patterns manifest themselves in geographically significant ways. For example, is there a difference in the use patterns of jet, JLM, and amber raw materials in northern as compared to southern Britain? Are there changes, similar to those observed by Gilchrist (2008), in the contexts of jet and amber materials (when those can be determined)? Do these materials appear more frequently in the burials of certain groups of people (men, women, children, elites) or certain contexts (mortuary, settlement, potentially ritual structures)? Do social pressures in different geographical regions present themselves differently within the archaeological record?

Markers of Lived Syncretic Religions

The first set of research questions posed in the design of this project dealt with the markers of syncretic religions within material culture and how those might manifest themselves in the archaeological record. Based on the initial analysis, there is no conclusive evidence that amber or jet/JLM served as material markers of syncretic religions in the transition to Christianity in Britain. However, the patterns in the data are indicative of certain changes that

could suggest a new syncretic lived material culture. The continued use of jet/JLM and amber demonstrates that these materials remained important in the material culture of Britain even after the introduction of Christianity. The shift from large numbers of beads and bead fragments in the pre-Christian Periods to the more varied form groups and functions of artifacts made of these two materials during the post-Conversion Periods (Figures 3.5-6) indicates the continued use of these materials to create religious and ritual material culture in both pre-Christian and Christian contexts. There is historical and academic precedence for the blending of materials and ideologies to develop a syncretic religious identity by continuing to use local materials. Accounts of the belongings of individuals who fell victim to the Spanish Inquisition in Sicily (1500-1550) list *paternosti*, or prayer beads, made of a number of materials, including jet and amber (Zeldes 1999: 77). These accounts demonstrate that amber and jet were popular raw materials for the creation of prayer beads throughout later Christian periods in Europe. The use of local materials combined with imported Christian motifs in Belarus during the 9th-13th centuries is another example of the use of local raw materials to create new religious objects (Dubrouka 2019). Specifically, with regard to amulets, this study demonstrates that the amulet culture of pre-Christian Belarus was not discarded in the face of the new Christian religious traditions, but was changed to incorporate new motifs, such as the cross (Dubrouka 2019: 4). The continuation of the amulet culture was effected by blending these motifs with the local raw materials, like tin or brass, that continued the ideological history of amulets, but utilized the formal cognitive system of Christianity to express those ideologies.

Other studies have investigated how new motifs using existing local raw materials may indicate the creation of a new community that practices these syncretic religions. Paul Werth discusses the Christian conversion of Muslim Tartars in the course of the 19th century (2000) and reminds scholars that groups being converted to a new religion often experience internal social and political disruptions that can result in the development of a new ethnic, political, and cultural identity within a pre-existing group, like the Christian Kräshens who separated from both their Islamic Tartar predecessors and the Russian community that converted them to Christianity by

retaining elements of both cultures (Werth 2000: 498). And finally, a new study by Roberta Gilchrist investigated the presence of “odd deposits” in burials, such as bone and amber beads that were reminiscent of pre-Christian material culture, in the later Christian burials (11th – 15th centuries) of Britain as indicative of continued magic use in local populations (2019). Her argument is that these are not single ritual deposits, but are indicative of magic continuing to permeate everyday life in Christian Britain, finding a way to blend with the new religious ideology on the island (Gilchrist 2019: 7). The results of the analysis presented in this thesis may indicate the creation of a transformed material culture that represents the creation of a new community based on both the Christian and pre-existing religious traditions, blended together into a third, syncretic religious identity. Jet/JLM and amber beads may demonstrate this principle, utilizing a “magical” material important in pre-Christian rituals to create beads used in a prayer rosary for the ritual elements of Christian worship services.

The majority of the jet/JLM and amber artifacts included in this study were found in burial contexts (Figures 3.11-12). There are a number of studies that show that burials provide an ideal social space in which to practice traditional values and rituals (Gilchrist 2008, 2019; Seetah 2015; Sherlock 2016; Williams 2011). Krish Seetah discusses how the slave religion, *Longanís*, demonstrates how individuals in the past blended religious ideologies through their burial “tool kits” (2015), Steven Sherlock studied how ancestral materials in Conversion Period Anglo-Saxon burials are indicative of the continued use of traditional religious ritual items in the face of religious change (2016), and Roberta Gilchrist studied how magical items in the same Conversion-Period and Late Medieval graves provided similar insights into syncretic material culture (2008; 2019). The study conducted here shows similar trends. The large numbers of jet/JLM and amber artifacts in these graves may be indicative of the use of material culture in the blending of religious ideologies from pre-Christian religions and the Christian ideological package. It is important to note, however, that the largest group of artifacts found in these burials are beads and bead fragments (Figure 3.15), which may have had a versatile and polysemic prophylactic function during the shift in politically supported religions in the early years of the

conversion process. The large numbers of beads could indicate either the continued use of beads from pre-Christian religious contexts with little to no change in their meaning, or they could demonstrate the mixing of two religious ideologies, utilizing the pre-Christian jet/JLM or amber beads in the creation of Christian material culture, like the rosary.

Shannon Iverson, in her studies of religious conversion in Latin America, argued for the “resignification” of religious practices during conversions (2019). Her argument is that when new religious rituals are practiced, they subsume existing rituals and assign different significances to those rituals that are more in-line with how those individuals experience their world (Iverson 2019: 278). It is perhaps more appropriate to use this resignification concept as an explanation for the continued use of jet/JLM and amber to create artifacts of religious significance during the Christian conversion of Britain. As stated above, Christian missionaries often used syncretism as a way to spread their doctrine throughout the world (Stevens-Arroyos 1998). Instead of assuming that the blending of pre-Christian ritual materials like jet/JLM and amber with Christian iconography is the syncretic outcome of conversion, we should consider that it may represent the local population influencing how Christianity was practiced based on their lived religious experiences. The jet/JLM and amber beads may show how local communities kept their traditional beliefs in tune with their new Christian practices, indicative of the syncretic blending of the two traditions. But it may also be a reflection of local influences utilizing a once-magical material in the new “magic” of Christian religious experiences.

Geographic Trends

This project also aimed to investigate whether the above-mentioned markers of religious syncretism were manifested in geographically significant ways. The results of this investigation have demonstrated some patterns in the geographical distribution of jet/JLM and amber artifacts during the Christianization of Britain.

This project first asked how artifacts made from jet/JLM and amber materials differed between northern and southern British contexts. This was investigated by comparing the differences in artifact distributions in Scotland and England. The data show that jet/JLM objects

were more common in England than in Scotland during the temporal parameters of this project (Figure 3.7). However, jet/JLM use declined in England over time while its use in Scotland increased from the pre-Conversion to the post-Conversion Periods. The same trends can be seen in the amber data set (Figure 3.9). Unlike jet/JLM, amber was more common in Scotland than in England during the pre-Christian Period. Then, during the post-Conversion Period, England surpassed Scotland in amber use. These trends in the artifact data may be due to the attempts of Christian leadership in the 8th century to create more uniformity between the churches throughout Britain (Yorke 1990). The majority of these reforms focused on the liturgy and message of local British churches but extended to the use of “proper” material culture as it influenced the practices of those messages within the churches. Alexandra Walsham outlined a number of steps in the conversion of Medieval Europe that mirror these historical trends in Britain (2014). She describes how communities, in the early stages of religious conversion, preserve a number of their local traditions that bleed into the new religious structure (Walsham 2014: 243). In the second phase of conversion, however, stricter rules are enforced by the clergy that bleed into the lives of their communities, putting a stronger emphasis on the rejection of traditional religious beliefs in favor of the new ideology (Walsham 2014: 244-245). This could have influenced the spread of jet/JLM and amber throughout Britain in the creation of material culture associated with the new religion. As communities were pressured into using only the material culture approved by the local religious leaders, local communities may have preserved their traditions through the use of raw materials popular in pre-Christian religious materials.

These trends may also be explained through the availability of natural resources in each of the geographic areas. As mentioned previously, jet and jet-like materials were found throughout Britain, but the main hubs of extraction and production were in Whitby and Kimmeridge (Watts and Pollard 1996, 1998; West 2016) in England (Figure 1.1).

This may be the primary reason that jet/JLM was more common in England than in Scotland, but it does not explain the change in use of these materials over time. The increase in Scottish jet/JLM use may be due to the increased trade between English and Scottish communities during

the Conversion Period, which would have involved an exchange of the raw materials and technology necessary to create these artifacts. A contemporaneous example of this technological spread comes from Medieval Ireland (Stevens 2017). Stevens' work follows the trade in jet/JLM artifacts and technology in Ireland, indicating that a mix of international cultural contact and internal trade networks worked together to spread jet/JLM jewelry throughout Ireland (2017: 257). A combination of external and internal trade of ideas and materials could account for the geographic trends presented in this thesis.

The same theory could be applicable to the trends seen in the amber artifacts. Amber was a popular commodity in Britain, coming from deposits in Scotland and through trade with the European continent (Clark 2013; Croom 2018). This could explain why amber was more popular in Scotland and over time showed increased use in England as the British Church became more consistent in standardizing its material culture markers. However, natural sources of amber were not the only way amber was introduced into British society. Amber was a popular global commodity in the long history of trade between Britain and the Continent via the Amber Route (Croom 2018) as well as Viking invasions in the north that brought amber artifacts from Nordic countries to the area (Clark 2013; Hickey 2014). The popularity of amber in Scotland may be due to increased interactions with invaders from the European continent, bringing more amber into the area that made its way into the local communities. As Christian conversions spread throughout Britain and the church became more unified, the use of amber may have spread throughout all of Britain, accounting for its decline in popularity in Scotland while England displayed an increase in artifacts made of this material. More likely is that the church leaders in England accumulated large stores of various materials that were rare and took them out of circulation at the expense of less urban and more remote areas of Britain like Scotland (Stevens 2017: 258).

This project also investigated the geographic trends seen in the changing contexts of jet/JLM and amber. Jet/JLM and amber are both found mainly in burial contexts during the pre-Christian period (Figures 3.13-14). This may indicate that the use of these materials in these

earlier periods was mainly associated with death rituals, as has been suggested by the study conducted by Roberta Gilchrist (2008) on the use of magical artifacts in Conversion Period burials that provide insights into the continued use of pre-Christian rituals in burials. She demonstrates how items found in Medieval graves (11th -15th centuries) were indicative of a continued prophylactic ritual, utilizing amulets and religious rituals, such as cremation, to assuage the fears surrounding the afterlife (Gilchrist 2008: 153). These pre-Christian displays of magic were public and carried out with the support of the clergy (Gazin-Schwartz 2001; Gilchrist 2008). One reason, according to Gilchrist, for the clerical acceptance of pre-Christian magical rituals was the incorporation of Christian motifs, mainly the Christian cross, in the new material culture. This could reflect a shift in the source of magical power that was more in-line with Christian teachings (2008: 152). The earlier jet/JLM and amber objects included in this project may have also been used in such a prophylactic manner, providing support for Gilchrist's argument, but over time, there is a change in contexts. Most notably, there is an increase in the variety of contexts in which artifacts made from jet/JLM and amber are found (Figures 3.13-14). This could demonstrate a change in the function of items made from these materials during the post-Conversion Period. Instead of being used primarily in burial rituals, these artifacts may have been increasingly used to make everyday items that could be found in a number of contexts. There is also an increase in the use of these items in religious practices. This could be an indicator of the syncretic nature of these items. Their use primarily in religious buildings shows that both of these raw materials in the production of Christian religious material culture represent an expression of the lived religious experiences of the new British Christian community utilizing materials that already held religious significance for them.

Alternate Social Explanations

The changes in function and form of these artifacts could have been influenced by a number of other factors apart from the creation of a syncretic religious material culture. Society was unstable in Britain during the conversion period, as local kings battled constantly for new territory and resources on the island (Trousdale 2013; Wormald 1999; Yorke 1990). The

disproportionately high number of beads in the data set as a whole (Figures 3.3-4) could be the most numerous artifact type from this time period because of the religious versatility of beads in the face of ongoing social changes. Beads were not only used in pre-Christian religious practices, such as magical rituals utilizing the unique abilities of amber and jet to burn and generate static charge (Gilchrist 2008), they were also used in rosaries that were part of lived religious practices for Christians (Mills 2015). The use of a versatile religious material culture, such as beads, could have served two purposes within the community. For those leading the conversions, it offered an easily recognized material platform for the ideological changes they were championing. For local communities, the versatility of beads may have offered them a measure of protection in the constant change represented by politically supported religions. This versatility is seen in modern-day migrant communities, as shown in Uma Kothari's study of peddlers in South Asia (2008). Kothari claims that the openness of South African street peddlers to multicultural items and identities is the key to their success in the "spaces between cultural collectivities" (2008: 502). In the face of constant religious ideological change, pre-Conversion groups did not have to generate entirely new lived religious material culture. Instead, they simply changed the ideological and ritualistic function of the base material, in this particular case, beads. Instead of "syncretic" materials demonstrating the blending of religious ideologies into a new material culture, this material culture category may demonstrate a more passive development of syncretic religious material culture, reflecting the shifting socio-political scene within Britain during the Christian conversion of the area. Christianity was also not the only vector for cultural contact from Continental Europe during the Medieval Period in Britain. In Scotland and Eastern England, Viking raiders utilized their advanced naval technologies to pillage the coastal areas for natural resources (Holman 2007). This created a situation in which cultural exchange could occur between British communities and Viking raiding parties and later settlements. The increase in amber decorative inlays during the post-Conversion Period (Figure 3.6) may be explained by this cultural contact. Most of these decorative inlays come from brooches, which were a common type of personal adornment amongst Viking communities (Glørstad 2012; Graham-Campbell

2019). While the increase in the number of decorative amber inlays may demonstrate syncretism, it could simply be the result of a cultural amalgamation of styles and raw materials between two cultural groups coming into contact.

The changes in jet/JLM and amber artifacts during the Christian conversion of Britain could also be attributed to simple stylistic changes within British culture. Various investigations of the popularity of these types of materials over time (Figures 3.5-6) show that beads were most popular during the pre-Conversion Period, decreasing in popularity during the post-Conversion Period, while other forms of artifacts made from jet/JLM and amber come into use. This may demonstrate the adoption of new styles of artifact using readily available raw materials. Studies conducted on Jewish culture in Spain during the Medieval “Convivencia” show how communities may admire and acquire the material culture of a religious movement while not adopting the beliefs behind said movement (Ray 2005). The decrease in jet/JLM and amber beads and the increased variability of artifact forms during the post-Conversion Period may be due to the adoption of other types of material expressions of faith, such as the jet/JLM cross pendants popular within Christian communities during this period (Pierce 2013). This might not reflect the full adoption of the religious values behind the material culture.

The continued use of jet/JLM and amber to create artifacts during this time of religious change may also be indicative of a resistance within communities to the new religious schema. One example of this phenomenon in more recent times is the way Jewish and German material culture shifted during the Holocaust and the intergroup violence that occurred during that time. One study done on the resistance movements seen within the concentration camps shows how groups suffering under heavy oppression would use their material culture to resist total cultural domination (Colls 2011). While the Jewish resistance in the concentration camps was more overt, portraying the Star of David on small stones or the presence of unburnt bodies in accordance with Jewish law (Colls 2011: 362), the material culture of Britain may represent a similar sentiment of resistance to outside influence. The use of pre-Christian raw materials in the creation of new Christian artifacts may reflect a desire on the part of local communities to hold

on to elements of their past in a way that allowed them to live relatively peacefully in Christian communities.

The decline in use of jet/JLM and amber during the post-Conversion period also may reflect the limited supply of these raw materials. Jet/JLM is a delicate substance which is easy to carve but just as easy to break in the creation process (de Carvalho et al. 2013: 2). The use of jet/JLM to create such small artifacts may have become less popular as artifacts were broken and the means to replenish them became less readily available. While production of objects made of jet/JLM ramped up again during the Victorian Period, craftworkers in the earlier Medieval Period, specifically during the centuries studied in this project, may not have had the necessary technologies to access deposits deeper in the ground. This would have impacted the use of these raw materials for artifact creation, pushing local communities to turn to other sources for these religious artifacts.

Suggestions for Future Research

The results of this preliminary analysis of jet/JLM and amber as a proxy for investigating responses to the introduction of Christianity to Britain suggest a number of future research directions. First, a systematic inventory of museum collections to produce a comprehensive catalog of objects made of jet/JLM and amber before and after the Christian conversion would provide sufficient data points to make a quantitative analysis possible. One such avenue would be addressing the change in size of these artifacts over time. Studies have investigated how relative object size may indicate reuse of these materials, such as one conducted on the reuse of buttons in Barbados (Reilly 2016). This study added material culture evidence to broader themes from the Caribbean, mainly focusing on the archaeology of poverty and economy in the region (Reilly 2016: 327). If the artifacts made of jet/JLM and amber in Britain can be shown to decrease in size over time, this could be further evidence that the sources of these raw materials were gradually being depleted or that the production and exchange networks were being radically impacted by socio-political changes. Studies on the size of these artifacts could also help in investigations of jet/JLM and amber artifact reuse over time. If the size of these materials

decreased over time, this could be due to reuse of older artifacts that were modified or repaired, which has been demonstrated in some prehistoric contexts (Sheridan and Davis 2002: 822). It could also partially explain the large number of beads in the sample, since these are also among the smallest object types and can be produced by recycling larger objects.

The stylistic aspects of these artifacts could also be analyzed further. The reliance of this study on online resources and previously-published material made such an analysis difficult. The study of stylistic shifts in jet/JLM and amber artifacts could demonstrate a number of important aspects of society and culture in Britain during the Christianization of the island. First, the use of traditional, pre-Christian designs on traditionally Christian material culture forms might demonstrate the blending of pre-Christian and Christian traditions during the introduction of this religion to Britain. Studies have shown that early Christian settlements utilized local motifs to help spread Christianity, such as the “good shepherd” scenes found throughout Turkey in the 4th and 5th centuries AD used to represent both Christ and Bacchus/Dionysus (Talloen 2011). Similarly, studies of stylistic elements of these artifacts could indicate further contact between communities in Britain and other areas, influencing the style of artifacts produced to reflect these contacts. This was mentioned in Stevens’ study on jet/JLM in Ireland, where local and international jewelry designs indicated contact between Irish, Scottish, and Viking communities surrounding the production of jet/JLM artifacts (2017).

Further in-depth studies of the contexts of these finds could investigate the social and cultural importance of these raw materials in Medieval Britain at the dawn of Christianization. There were a number of artifacts in this project with unknown or unclear contextual backgrounds. This colored the outcome of this project, providing only a very narrow view of the contexts, and by proxy the function and importance, of these artifacts during this time period. Material analysis of the jet/JLM and amber objects might shed light on their sources of origin and the routes by which they made their way into the archaeological record could be traced more readily. More indepth studies could also investigate further breakdowns of the contextual categories used here. An analysis of the types of graves with jet/JLM and amber objects by

socio-economic standing, age or gender could provide further evidence of how these artifacts were used within society in the past. Roberta Gilchrist has touched on these themes in her work in later Medieval Britain (11th – 15th centuries), placing special importance on the role of women in the continued practice of pre-Christian religious traditions (2008: 121). However, few studies have been conducted on the pre-Conversion Period graves discussed in this project. A gendered analysis of these artifacts would provide insights into how society separated itself into different categories utilizing material culture made from particular raw materials. For example, if more women than men were buried with objects suggesting the adoption of certain Christian symbols or if amber and jet/JLM change in terms of their use over time in women's and men's graves, this could be recognized if the burial sample were increased in size.

An expansion of the geographical parameters of this project also would provide insights into the use of jet/JLM and amber throughout the study area and beyond. Investigating the use of these raw materials in other areas, such as Ireland, Wales, or Norway, would expand upon how they were used in a more global context, specifically as they relate to trade within the North Sea, building on this study as well as Stevens' study of jet/JLM use in Ireland (2017). This could also provide a number of insights into the social, cultural, and political ramifications of contact between these areas during this time. Increased use of jet/JLM and amber could demonstrate continued cultural contact between these areas in the form of trade or exploitation. This could also have implications for the migration of people and ideas through this area, following the spread of technologies related to jet/JLM and amber artifact creation throughout the North Sea region. This study could also be expanded to study how British consumption of jet/JLM and amber compared to the rest of Europe during the Medieval Period. Both jet/JLM and amber were used throughout Europe. However, there are few studies comparing the use of these materials between the different areas. A large-scale comparative study could demonstrate the similarities and differences in the use of these materials, like the importance of amber in Polish Christian rituals (Bogacka 2018) or the connection between jet/JLM and amber with ailments of the eye in Roman Europe (Hamann 2018), both studies that demonstrate contact between communities.

This thesis has provided a foundation for more in-depth studies of jet/JLM and amber use in Medieval Britain by demonstrating that these materials can be used to explore larger social and religious transformations in past human societies because of their special physical qualities and inherent symbolic significance.

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APPENDIX A: JET/JLM DATA SET

ONLINE DATABASE	ITEM #	DATE	COUNTRY	COUNTY	SITE	CONTEXT	QUANTITY	ITEM DESCRIPTION	MATERIAL	DESIGN
British Museum										
	1855,0521.2.h	7th century	England	Kent	Breach Down	Burial	1	bead fragment	jet	
	1995,0102.506	5th-7th century	England	Kent	Buckland	Burial	1	bead	jet	
	1879,0524.89	7th century	England	Kent	Breach Down	Burial	39	bead	jet	
	1987,0601.1	12th century	England	Norfolk	Thelton	Unknown	1	chess piece	jet	
	1875,0403.176	6th-7th century	England	Yorkshire	Ripon	Unknown	1	cross pendant	jet	
	1980,1021.468	5th-7th century	England	Kent	St. Peter's Tip	Burial	1	ring	jet	D-shape cross
	1875,0715.4	13th century	England			Unknown	1	seal	jet	eagle, inscription: Est avis Ascendens
	1978,0102.1	13th century	England	Surrey	Kenley	Unknown	1	seal	jet	mounted knight, Inscription: SIGILUU:WILLEMI:FILII:HAMONI
	1883,0712.1	13th century	England			Unknown	1	seal	jet	fleur de lis, inscription: TECTATAG///LECTA LEGE
Victoria and Albert Museum										
	A.80-1923	10th-11th century	England			Unknown	1	crucifixion display	Walrus ivory & jet eyes	crucifixion of Christ, holes suggest affixion to manuscript
Portable Antiquities Scheme										
	PUBLIC-AB2391	8th-9th century	England	Lincolnsh ire	Near Louth	Unknown	1	bead	jet	
	PUBLIC-53A3B8	12th-13th century	England	Lincolnsh ire	West Lindsay	Unknown	1	cross pendant	jet	circular rings with dot in center
	LIN-A4992D	8th-9th century	England	Lincolnsh ire	East Lindsay	Unknown	1	spindle whorl	jet	
	SWYOR-3304B6	11th-13th century	England	Yorkshire	Barnsley	Unknown	1	cross pendant	jet	Circle-dot-line design
National Museums of Scotland										

	X.NO 79	10th-12th century	Scotland	Berwicks hire	Lauder	Settlement	1	cross pendant	jet	6 dot and circle inscribed design
	X.GV 1154	5th century	Scotland	East Lothian	Traprain Law	Settlement	1	handle	jet	
	X.HW 11	10th-11th century	Scotland	Ayrshire	Lochspouts Crannog	Settlement	1	cross pendant	jet	incised circle design
	X.IL 175	9th-10th century	Scotland	Eigg	Kildonan	Unknown	1	bead	jet	
	X.IL 176	9th-10th century	Scotland	Eigg	Kildonan	Unknown	1	bead	jet	
	X.IL 349	9th-10th century	Scotland	Orkney	Lamaness	Burial	1	bangle	jet	
Publications										
Sherlock (2016)										
	Grave #42	7th century	England	Yorkshire	Street House	Burial	1	pin	jet	globular pin head
	Grave #43	7th century	England	Yorkshire	Street House	Burial	2	pin	jet	potential cross design
Pierce (2013)										
	YAT 9862	12th century	England	Yorkshire	Coppergate	Midden	1	cross pendant	jet	ring-and-dot motif
	YAT 9863	12th century	England	Yorkshire	Coppergate	Midden	1	cross pendant	jet	ring-and-dot motif
		12th century	England	Yorkshire	Gisborough	Religious	1	cross pendant	jet	ring-and-dot motif
	PMAG A10331/C4470-3	12th-13th century	Scotland	Perthshire	Perth	Midden	1	cross pendant	jet	ring-and-dot motif
	SMT 1938 1147.6	11th-13th century	England	Yorkshire	Scarborough	Religious	1	cross pendant	jet	ring-and-dot motif
		12th-13th century	England	Yorkshire	Pontefract	Religious	1	cross pendant	jet	ring-and-dot motif
		11th-12th century	England	Yorkshire	Whitby 1	Religious	1	cross pendant	jet	ring-and-dot motif
		11th-12th century	England	Yorkshire	Whitby 2	Religious	1	cross pendant	jet	ring-and-dot motif
	PAS SWYOR-3304B6	11th-13th century	England	Yorkshire	Wombwell	Unknown	1	cross pendant	jet	ring-and-dot motif
Gilchrist (2008)										
		12th-13th century	England	West Sussex	Rusper Nunnery	Religious	10	bead	jet	associated with a jet and amber rosary
		12th century	England	Avon	Bristol	Religious	1	pendant	jet	
Kaznakov (2013)										
	G41/49	6th-7th century	England	Yorkshire	Sewerby	Burial	1	disc	jet	

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APPENDIX B: AMBER DATA SET

ONLINE DATABASE	ITEM #	DATE	COUNTRY	COUNTY	SITE	CONTEXT	QUANTITY	ITEM DESCRIPTION	MATERIAL	DESIGN
British Museum										
	1999,0401.1	8th-9th century	England	Isle of Wight	Isle of Wight	Unknown	1	item	amber inlays	person, runic incscription (Old English)
	1995,0102.104.b	5th-7th century	England	Kent	Buckland	Burial	8	6 bead, 2 fragments	amber	
	.1218.'70	6th-7th century	England	Kent	King's Field	Burial	1	amulet	amber	
	.1218.b.'70	5th-7th century	England	Kent	King's Field	Burial	1	bead	amber	rectangular bead
	.1218.d.'70	5th-7th century	England	Kent	King's Field	Burial	1	bead	amber	drum-shaped
	.1218.c.'70	5th-7th century	England	Kent	King's Field	Burial	1	bead	amber	oblate
	1995,0102.32	5th-7th century	England	Kent	Buckland	Burial	1	bead	amber	
National Museums of Scotland										
	X.FC 8	8th century	Scotland	Ayershire	Hunterston	Unknown	1	brooch	amber inlays	Celtic and Anglo-Saxon designs
	X.FC 10	8th century	Scotland	Stirlingshire	Dunipance	Burial	1	brooch	amber inlays	interlaced and zoomorphic designs
	X.FC 12	9th century	Scotland	Inverness-shire	Croy	Settlement	1	brooch	amber inlays	penannular design
	X. FC 14	9th century	Scotland	Inverness-shire	Croy	Settlement	1	brooch fragment	amber inlays	penannular design
	X.FC 16-19	9th -10th century	Scotland	Inverness-shire	Croy	Settlement	4	bead	glass and amber	
	X.FC 183-184	8th - 10th cntury	Scotland	Argyll	Carn a Broch	settlement	2	brooch	amber inlays	Celtic interlace designs
	X.GA 999	3rd-7th century	Scotland	Dunvegan	Iadhard	Settlement	58	necklace of beads	amber beads	strung together
	X.IL 363	9th-11th century	Scotland		W. Scotland	Unknown	1	mount	amber settings	
	X.IL 728	8th century	Scotland	Orkney	Westness	Burial	1	brooch	amber inlays	
Publications										
Sherlock (2016)										
	Grave #73	5th-7th century	England	North Yorkshire	Street House	Burial	1	bead	amber	
Hawkes (2007)										
	SP 80 84	5th-7th century	England	Northhamptonshire	Desborough	Burial	1	bead	amber	

	Sp 619 638	5th-7th century	England	Northhamptonshire	Norton	Burial	1	bead	amber	
Wilkinson (1995)										
		6th-8th century	Wales	West Glamorgan	Hen Gastell	Settlement	1	bead	amber	one side is flat, the other beveled, irregular shape
		6th-8th century	Wales	West Glamorgan	Hen Gastell	Settlement	1	disc	amber	
Gilchrist (2008)										
		12th-13th century	England	West Sussex	Rusper Nunnery	Religious	14	bead	amber	associated with jet in a rosary
Hickey (2014)										
	3	9th-12th	Scotland	Sutherland	Balnakeill	Burial	1	bead	amber	necklace
	3	9th-12th	Scotland	Outer Hebrides	Cnip	Burial	1	bead	amber	
	1	9th-12th	England	Cumbria	Carlisle	Religious	1	bead	amber	
Kaznakov (2013)										
	G41/49	6th-7th century	England	Yorkshire	Sewerby	Burial	15	bead	amber	
							121			