
NARWHALS OR UNICORNS? EXOTIC ANIMALS AS MATERIAL CULTURE IN MEDIEVAL EUROPE

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Abstract: Animals from distant lands fired the imaginations of people living in Europe throughout the Middle Ages. This is attested by a considerable wealth of iconographic and written material which has been explored from many perspectives, providing valuable insights into medieval western conceptualizations of the fringes of the known world and the otherness of exotica. However, the physical remains of non-indigenous species – both those recovered from archaeological contexts and extant in private collections – have generally been examined in isolation and rarely incorporated into a broader framework exploring the reception and utility of exotica. This article offers a new perspective on the topic by focusing on the zoological identity of non-indigenous animal body parts as ‘material culture’.

Keywords: animals, exotic, material culture, medieval, morphology, narwhals, taxonomies, unicorns, zooarchaeology

INTRODUCTION

Real and imaginary animals from distant lands fired the imaginations of Europeans throughout the Middle Ages. This is attested by a considerable body of artistic and written material – from bestiaries to travel literature, from decorated gaming pieces to stained glass – and the appropriation of exotic animals as something other, yet also something familiar, ranged from the ornamental to the didactic. Numerous studies have shed light on the multiple roles of exotic animals in medieval European societies focusing on both individual species (e.g. Druce 1917; Einhorn 1976; Haist 1999) and broader themes (e.g. Benton 1992; George and Yapp 1991). However, the physical remains of non-indigenous species – both those extant in private collections and occasionally recovered from archaeological excavations – have generally been examined in isolation, and their origin, reception and utility have rarely been incorporated into broader interpretative frameworks (notable exceptions include Lloyd 1971 and Shalem 1998, 2004). Focusing on the zoological identity of non-indigenous animal products, this article aims to present a framework for integrating a range of evidence and perspectives

to further our understanding of the movement, construction and perception of animal-related material culture in medieval societies.

INTEGRATING CLASSIFICATION SYSTEMS

'... nous ne devons pas projeter telles quelles dans le passé nos connaissances, nos conceptions, nos taxonomies d'aujourd'hui [... we should not project onto the past that which relates to our present day knowledge, conceptions or taxonomies]'. (Pastoureau 1999:21)

Recent research into various aspects of human–animal relations in the Middle Ages has stressed the importance of adopting an approach rooted in medieval systems of classification over empirically derived taxonomic systems developed by Linnaeus and others in the eighteenth century, where species are identified by distinct morphological characteristics based on shared characteristics and grouped accordingly. Moreover, these systems have not remained unchanged and in the second half of the twentieth century in particular, evolutionists and systematists have advocated new approaches to taxonomy in response to developments in DNA studies (Quicke 1993:3–4). The point being made is that researchers examining written and artistic sources are increasingly emphasizing that animals were conceptualized differently in the past than in the present, and that one cannot simply map the taxonomic paradigms of the latter onto the former (see chapters in Salisbury 1993 and Hassig 1999, especially Gravestock). Animals were broadly classified in medieval European intellectual writings according to their elemental status: birds belonged to air, whales to water and so on; monstrous forms such as dragons breached these boundaries by combining multiple elements within the individual body (Williams 1996:177–179). This ordering of the natural world, inherited from Classical tradition, was expressed in religious art, alongside other systems of distinguishing and grouping animals, for example in terms of behaviour, ownership, function and edibility (Salisbury 1994).

However, analyses of faunal assemblages recovered from medieval archaeological contexts are invariably rooted in modern taxonomy, use systematic taxonomic nomenclature to ensure consistent identification and draw on contemporary biological, ecological and ethological analogues to reconstruct the morphology and behaviour of animals in the past, informed by contemporary written and artistic sources (Reitz and Wing 2000:33–35). The examination of the physical remains of non-indigenous species brought into multiple regions of Europe from the eleventh to the fifteenth century presents an opportunity to integrate modern and medieval taxonomies and conceptualizations of the natural world.

This approach heeds Pastoureau's warning (quoted earlier) and should not be confused with 'rationalism'. A rationalist analyst working within the confines of a modern taxonomic system views the identification of exotic and 'imaginary' animals in medieval (and Classical) societies as the result of misunderstanding and sloppy thinking with the aim of correcting this confusion, and thus explaining away manticores as cheetahs, yales as Indian water buffaloes, and unicorns as

rhinoceros and narwhal (Gravestock 1999:121, n.12). It is useful to identify an artefact described as a unicorn horn as a narwhal tusk in that it provides information about its geographical and cultural origin, however it is equally useful and essential to consider its identification as a unicorn – touching not only on questions of morphology, modification and utilization but also on conceptualizations in different geographical and cultural contexts. In this respect a zooarchaeological approach treats the physical remains of exotica – sometimes recovered from excavations but more often extant in private collections having never been buried, or having been excavated, or buried and recovered in the past – as material culture, and more specifically as particular kinds of artefacts shaped by, but also shaping human responses.

From a zooarchaeological perspective, describing the lion as *indigène* to western Europe (Pastoureau 1999:23) is not particularly useful, for although the lion's virtual omnipresence in medieval religious and secular art reflects one level of familiarity, it must be differentiated from those species inhabiting local landscapes and generating different sets of experiences and responses. Lions in the form of live individuals, and in at least one case as pelts (documented in Avignon in 1383; Delort 1978:170) were imported into various parts of Europe during the Middle Ages, even yielding archaeological remains such as two skulls recovered from excavations at the Tower of London in the 1930s (O'Regan 2002), but the majority of exotica leaving material traces are represented by horns and tusks in one form or another. Whilst these have been investigated from stylistic, symbolic and technological perspectives, zooarchaeological studies have focused, perhaps unsurprisingly, on indigenous species that are represented by far larger sets of data. Trade in livestock and furs has been explored on the basis of faunal remains at local and regional scales (e.g. Bond and O'Connor 1999; Clavel 2001; Dobney et al. 1995; Vretemark 1989; Wigh 2001) with only limited forays into long-distance movement of fauna (e.g. contributions in Cameron 1998) – these have been the traditional domain of economic historians (e.g. Delort 1978; Martin 1986). Recently, Ashby (2002, 2003), O'Connor (2002), and Pluskowski (2002) have advocated integrated approaches and multi-disciplinary dialogues into medieval zooarchaeological studies. This article aims to build on these foundations, with an approach that integrates modern and medieval zoological taxonomies within the following interpretative framework focusing on exotica as material culture. This can be structured as a series of stages in the life history of an exotic animal, dead or initially alive, whole or in pieces:

1. The original geographical and cultural context of the 'real' animal.
2. The circumstances surrounding the identification and acquisition of the animal.
3. The extent of initial anthropogenic modification and its relationship to morphological characteristics.
4. The stages of transportation from source to market outlet.
5. The extent of secondary anthropogenic modification and its relationship to morphological characteristics.
6. Further transportation and modification (if applicable).

7. The cultural context of the final form and its place of deposition.
8. Its contemporary identification.
9. The daily 'consumption' of the body part:
 - (a) Levels of accessibility (awareness, visual, physical) to different social groups and how/whether this changed over time.
 - (b) Active (e.g. ceremonial) or passive (e.g. ornamental) use of the artefact and how/whether this changed over time.
 - (c) How both of the foregoing factors can be related to perception and identification of species in this context.

There are of course limitations; not all of these stages are readily discernable from the surviving evidence and some may require support from ecological and anthropological analogues. One of the central themes in the life history of exotica is how they were identified and perceived in different ecological and cultural contexts. In medieval European societies the visual arts functioned as a social language, and representations of animals (both indigenous and exotic) strived to express a diversity of meanings beyond a documentary record, with a sense of accuracy directly related to context. The animals of Renaissance art are frequently described as more recognizable, more naturalistic (Lloyd 1971:119) but this perspective derives from modern expectations of visual documentation of fauna; in medieval art, all figures – whether exotic animals, saints or queens – were recognizable by their distinct characteristics. Given the importance of exotica in social display, when exploring the role of animal identity in related material culture, it is useful to sub-divide imported species into groupings on a morphological spectrum ranging from the presence of a complete set of diagnostic characteristics on a live animal, through to their virtual absence in artefacts processed from raw materials derived from their skeletal elements. The presence or absence of these characteristics has implications for the relative importance of the animal's 'identity' in visual communication. These categories will now be outlined in more detail.

THE MORPHOLOGICAL SPECTRUM OF EXOTICA IN MEDIEVAL EUROPE

Live individuals

The presence of live exotica across medieval Europe from the eleventh to the fifteenth century is predominantly indicated by written sources, although archaeological remains occasionally complement this. With the exception of monkeys and non-indigenous birds owned by individuals, the majority of live exotica were housed in a limited number of royal, seigneurial or civic premises – referred to since the eighteenth century as 'menageries' (Kisling 2001:28). From a pan-European perspective, the most popular animals sustained and often successfully bred were the large felids – lions, leopards and cheetahs – whilst less frequently encountered animals included elephants, polar bears and porcupines. The sole example of a live tiger is recorded in 1478, housed in the castle of the Duchess of Savoy in Turin (Guggisberg 1975:181) and the first live rhinoceros does

not appear in Europe until the early sixteenth century. Some species such as camels became exotic when housed in western European collections alongside other non-indigenous animals, although as attested by written and increasingly archaeological evidence, they could be found in certain parts of eastern central Europe, the Carpathian Basin, the Balkans, the Russian and Ukrainian Steppes, as well as widely experienced on the southern fringes of Christendom (Bartosiewicz 1996; Bökönyi 1974:15; Gauthier-Pilters and Dagg 1981:122–3).

It is worth noting that rabbits and fallow deer were introduced, managed and successfully bred on a huge scale in western Europe – their status is perhaps comparable to the widespread use of tamed cheetahs for hunting in Byzantine and Middle Eastern societies (Nicholas 2001); they can be differentiated from ‘menagerie’ species in that they represent the deliberate and widespread introduction of foreign species fully incorporated into the practical elements of, in this case, elite hunting culture, rather than maintained in what was effectively ecological isolation, solely for the sake of ownership and social display (for the latter see Shenton 2002:76–77). Although established imports, they retained the status of luxuries into the sixteenth century. As examples of the species with a complete set of morphological characteristics, imported animals appear to have been regularly identified with confidence. The popularity of exotica with diagnostic features in religious and heraldic art provided a basis for identification (within medieval taxonomic paradigms), and this could be complemented by first-hand experiences of these animals encountered by travellers, pilgrims, merchants and crusaders in distant (or not-so-distant) lands.

Body parts

This category concerns parts of animals acquired from a range of ecological and cultural contexts that have retained some distinct morphological features, and were embellished rather than significantly modified or used as subsidiary components for other objects. The preservation of the original form may imply that the identity of the animal in question was important, alternatively certain morphological characteristics could have been suitable for specific functions, or both. Skins of exotica species, acquired and processed beyond the fringes of Christendom, rarely appear in medieval European archaeological contexts and then only where skeletal elements were left attached to the pelt.

The bulk of information is derived from late medieval written sources indicating that leopard and/or cheetah pelts were available from major Mediterranean outlets such as Majorca, Valencia and Lisbon and were subsequently transported to northern Europe, documented in England, France, Flanders and Germany. In 1440, for example, 19 coats manufactured from leopard pelts were shipped to Southampton from Barbary via Spain (Delort 1978:171, n.222). Leopard furs were also available via trade networks linking eastern Europe with Asia; a cranial fragment of a mature male leopard recovered from a fourteenth-century deposit at the site of Segesd-Pékófield (Hungary) may have served as a decorative addition to the animal’s skin, which was either used as an element of a garment or a rug; the

latter assumption is better supported by the flat and polished bone surface (Bartosiewicz 2001). Feathers are likewise almost exclusively documented in late written and artistic sources. More frequent survivals include horn-shaped objects: the tips of elephant tusks predominantly obtained from eastern Africa between the eleventh and fifteenth centuries, of which 75 remain extant in museums, private collections and church treasuries around the world (Shalem 1998:99); significantly fewer extant narwhal tusks from Greenland which are discussed in more detail later; walrus tusks from Arctic Norway and Greenland, recovered as fragments from archaeological contexts in the North Sea region (Roesdahl 2001); aurochs horns from parts of Scandinavia, central and eastern Europe; and bison horns predominantly obtained from north-eastern Poland and Lithuania. All these were used for display and a range of ceremonial activities in both secular and religious contexts, complemented by skulls, skins, shell and fossilized bones. The identification of body parts removed from their original context appears to have been closely related to morphology, providing flexibility for designating species along with the related properties and function of the artefact.

Raw materials

In this context, the term 'raw materials' refers to those products derived from exotic animals and processed into artefacts retaining few if any diagnostic morphological traits. The most common raw material derived from exotica and used in manufacturing in medieval Europe was ivory: elephant ivory obtained in varying amounts from eastern Africa and India; and walrus ivory obtained from arctic Norway, Greenland and northern Russia (Barnet 1997; Gaborit-Chopin 1978; Roesdahl 1998, 2001). Archaeological and written sources indicate that ivory was transported as tusks and was recognized as belonging to distinct animals. The tusks were subsequently transformed into an extensive range of artefacts or components for artefacts, resulting in the loss of diagnostic morphological traits, although the product was ultimately identifiable as ivory, recognized both by those involved in mercantile activities and those who purchased or commissioned ivory objects. For example, both walrus tusks handled by Scandinavian merchants and elephant tusks handled by Italian merchants were referred to as 'teeth' – *Tann* or *tönn* (Fell 1984:61) and *denti* (Evans 1936:418) respectively. The specific animal origins of ivory are not always recorded although there is no reason to doubt that traders and artisans would have been aware of the differences, evident from the shape, size and texture of tusks. Consumers would have recognized ivory but even if they were able to or inclined to identify the source species, the removal of distinct morphological traits shifted the focus from the animal to the subject of the new product, such as the representation of the Virgin.

There is no evidence to suggest that the elephant in an ivory triptych or the walrus in an ivory book cover was any more important than the oak in a wooden crucifix, the main differences between the first two and the latter being one of commercial value – related to its detachment from its original ecological context (Choyke 2003:151) and its rarity – as well as the relative hardness and polishing

properties of the media; both ivory and wood could be, and indeed were, painted and gilded (Gaborit-Chopin 1997). This contrasts with objects such as oliphants (carved ivory horns), which preserved their elephantine identity in their shape (Shalem 2004:152). The category of 'raw materials' then is different from the previous one in that it represents a treatment of exotica resulting in the comparative loss of animal identity in the finished product.

These three categories represent analytical criteria useful for a zooarchaeological approach. However they can also be linked to medieval classification systems. In natural histories, bestiaries, encyclopedias, depictions of creation and so on, animals both indigenous and foreign, fabulous and ordinary, from various geographic regions, were grouped according to element (Gravestock 1999:124), and, as suggested earlier, composite creatures violated these categories of difference (Salisbury 1994:138–159; Williams 1996:177–207). Following this taxonomic approach, the 'animal' origin (if not source species) of all three analytical categories was recognized by both traders and consumers. With the exception of local marvels (such as dragons and lake monsters) they were associated with regions at or beyond the fringes of Christendom, and their comparative rarity and value ensured they were virtually restricted to the upper echelons of society – which does not mean to say that lower social groups could not experience them in other ways, such as in the context of ceremonial display. The focus on 'exotica' in this article is therefore not intended as an interpretative strait-jacket but rather to encompass the broadest spectrum of conceptual and commercial value attached to non-indigenous animals. Furthermore, as a category of fauna removed from their original ecological context, transported and often reshaped, it exemplifies the concept of animals as human constructs. This last point will be demonstrated by a brief case study exploring the appropriation of narwhal tusks in medieval European societies.

CASE STUDY: NARWHAL TUSK INTO UNICORN HORN

The narwhal tusk is an elongated left upper incisor found in the jaws of adult males (and exceptionally females), which can grow up to approximately 3 m in length. The pulp cavity extends for virtually the whole length of the tusk, which is particularly striking because of a spiral groove which winds around the exterior surface all the way up to the tip (MacGregor 1985:19). A second upper tooth usually grows to a length of 200 mm but can sometimes grow to match the left tusk (Fig. 1). Narwhals are restricted to Arctic waters although there is very little information on tusks acquired from the seas around Russia before the sixteenth century (Bruemmer 1993:12), and narwhal carcasses beached on the British or Scandinavian coasts by summer currents cannot be quantified before the seventeenth century (Humphreys 1953:17). The largest population, and almost certainly the primary source for medieval western markets, was located in the waters around Greenland, most likely Baffin Bay and Kane Basin (Bruemmer 1993:105; Heptner and Naumov 1988:792–794). Here, Norse settlers would travel to



Figure 1. A narwhal skull with double tusks measuring 2.54 m and 2.33 m, recently acquired by Inuit hunters. Image © Arctic Art Sales (www.arcticartsales.com) and reproduced with permission.

the icy hunting waters of the Nordsetur and beyond (Fig. 2) to acquire not only narwhals, but also walrus and polar bears – indeed, the availability of valuable indigenous fauna must have been a major cause, rather than consequence, of trade across the Atlantic (Seaver 1996:38–9). The extent of medieval narwhal hunting and trading is difficult to gauge but it was probably infrequent and dangerous. It has been suggested that most narwhal tusks were acquired from the native Inuit, since the time it would take to travel from the Western Settlement to the narwhals' summering waters left little time for hunting (Bruemmer 1993:104–105).

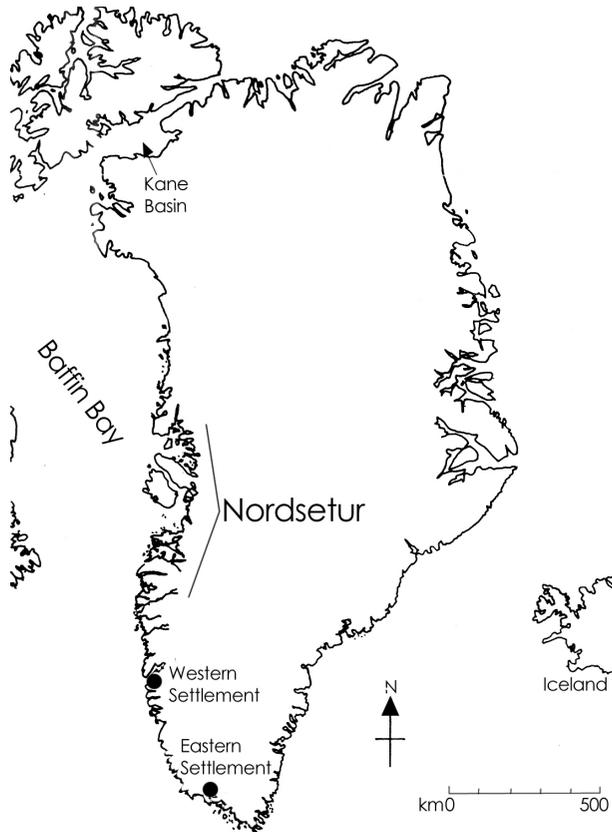


Figure 2. *The location of the Nordsetur in medieval Greenland in relation to the Norse Western and Eastern settlements, Baffin Bay and Kane Basin.*

Fragments of narwhal are indeed extremely rare in archaeological contexts (Arneborg 2000:306–307). Four or five narwhal skulls, however, were found buried in the chancel at Gardar (in the Norse Eastern Settlement in Greenland), along with 20 to 30 walrus skulls (Pingel 1834:310; Roesdahl 2001). Greenland Norse may have also been responsible for the careful placement of two accumulations of walrus mandibles on Willows Island, off Baffin Island (Seaver 1999:564). Whether indicative of hunting or trading, the treatment of both narwhal and walrus remains in Greenland is unparalleled in contemporary European societies. Together with the polar bear the explicit commercial value of the walrus and narwhal may have been paralleled by the use of these animals as magical or propitiatory agents, or at least possessing magical/religious significance (McGovern 1985:302) – perhaps even developed within a paradigm comparable to one found in parts of Scandinavia, where impressive wild animals were associated with both totemic and religious functions, even after the official acceptance of Christianity (Breen 1999; Price 2002: 269–374).

Narwhal tusks were transported to northern Europe via the major trade routes across the Atlantic linking Greenland and Iceland with the British Isles, Scandinavia and ultimately the Baltic. In this new cultural context they were appropriated as unicorn horns. Although likely to have been shipped in small numbers and relatively infrequently, they were significant objects of trade (Seaver 1996:181). Only a few examples are extant in European contexts from the twelfth to the fourteenth century, whilst higher numbers survive and even more are recorded in princely inventories from the fifteenth and sixteenth centuries (Faidutti 1996).

The artefacts commissioned and obtained by the last reigning duke of Burgundy, Charles the Bold (1433–1477), exemplify the late medieval seigneurial interest in, and demand for, unicorn products. These appear to have been important in visual display particularly during spectacular occasions; for example, during the feast given in honour of the marriage of Margaret of York and Charles in 1468, unicorn horns were placed in the four corners of the sideboard, where, as suggested by numerous late medieval representations of halls, ornaments would usually be displayed (Shepard 1930:110), and a description of a banquet held by the duke in October 1473 refers to six unicorn horns, two of which were an arm's length, housed in the treasury alongside items of gold and silver (Vaughan 1973:146). As recognized wards against poisoning, one of the functions of these objects may have been to discourage assassination attempts (Faidutti 1996), indeed Olivier de la Marche refers to the duke's habit of keeping a piece of unicorn horn close by at meals to test dishes for poison (Cartellieri 1929:68). Sometimes unicorn horn was used as a raw material – an inventory of the duke records a small piece of unicorn horn carved with the image of the Virgin holding Christ (Faidutti 1996). But the only unicorn products acquired by the duke to have survived are a single narwhal tusk and the duke's *ainkhürnschwert* or 'unicorn sword' – the hilt, pommel and scabbard incorporating plates of narwhal tusk (Fig. 3); both artefacts passed into the possession of the Holy Roman Emperor Maximilian I as a result of his marriage to Mary of Burgundy in 1477, eventually finding their way into the Imperial treasury in Vienna (Fillitz 1986:198). Narwhal tusks continued to be valued into the seventeenth century; the quantities used in the construction of the unique royal Danish 'unicorn' throne at Rosenborg Castle only serve to emphasize their rarity and prestige, although by this time the conceptual link between unicorns and narwhals was more or less severed (Faidutti 1996).

Despite their association with known seigneurs and treasuries, extant tusks are difficult to date precisely – surviving fittings and decoration may provide a chronological pin for contextualizing the artefact but this cannot be used to pinpoint the date of acquisition, either in Greenland or in Europe. Later medieval written sources indicate that like other artefacts derived from exotic animals, such as oliphants, narwhal horns could be presented as royal or seigneurial gifts to churches. Despite the difficulties in tracking down the 'life history' of tusks from merchants to treasuries, it is possible to examine the relationships between modification, levels of 'consumption' and perception. I would like to focus on those tusks used in ecclesiastical contexts: as components of processional staffs



Figure 3. Detail of the narwhal plates incorporated into the hilt and scabbard of the *ainkhürnschwert* or 'unicorn sword', Imperial Treasury (Schatzkammer), Vienna. Image © Kunsthistorisches Museum Wien, and reproduced with permission.

drawing on examples of unspecific provenance from England and one from Salzburg, and as free-standing objects, drawing on examples from Venice and Paris.

THE CEREMONIAL USE OF NARWHAL TUSKS

Processional staves used by medieval ecclesiastics varied in shape, size, function and symbolism. The material used in their construction also varied although

church inventories contain numerous references to ivory pastoral and precentors' staffs (Stratford 1987:109). From the surviving evidence it is clear that such staffs typically consisted of a number of components – the stave and the head, with crosiers formed from volutes and knops – one or both of which could be fashioned from ivory. A number of crosier heads constructed from walrus or elephant ivory have survived from various parts of Europe, as have occasional examples of decorated ivory staff sections (e.g. Zarnecki et al. 1984:229–230). A rare example of the latter constructed from the tusk of a narwhal now stands at 1.77 m and is housed in the treasury of Salzburg Cathedral. Although mentioned in fourteenth and eighteenth-century inventories, it has been dated to the late twelfth century on the basis of an inscription on a silver band encircling its base, referring to the name of its creator – Friedrich (Fillitz and Pippal 1987: 220).

Two twelfth-century narwhal tusks in England may also have formed components of processional staffs but they differ from all other medieval examples in that they are elaborately carved. In the Victoria and Albert Museum in London an example which originally stood at over 1.17 m is carved with straight bands of scrolls on its lower portion depicting humans entangled in foliage, whilst the upper ornament depicting winged dragons chasing animals follows the spiral twist of the horn and would have been further decorated with metal strips, most probably gilt copper, between the bands of ornament. The design is comparable to that of a column to the right of the central portal at the west end of Lincoln Cathedral, itself influenced by similar examples at St-Denis, Paris, and this suggests a date of the second quarter of the twelfth century (Zarnecki et al. 1984:223, no.204). The unpublished narwhal tusk housed in the Liverpool Museum standing at 1.14 m has comparable decoration and may have been paired with the Victoria and Albert Museum artefact (Figs 4–6). Tracings of fittings at the top of the tusk suggest it may have been used as a processional (or indeed static) candlestick (Longworth pers. comm.). Both artefacts would have required the collaboration of ivory-carvers and metalworkers.

Narwhal tusks continued to be used in religious contexts in the fourteenth century through to the sixteenth century. One example standing at just under 2 m is recorded in the accounts of the French royal treasury in 1388 as a unicorn horn and probably subsequently deposited in the royal treasury at St-Denis, where a comparable object is recorded in an inventory of 1533–1534. Today the tusk is housed in the Musée National du Moyen Age in Paris and although it is



Figure 4. *Decorated narwhal tusk measuring 1.14 m, twelfth century, English, Liverpool National Museum. Image © National Museums Liverpool, World Museum Liverpool and reproduced with permission.*



Figure 5. Detail from the upper half of the tusk in Fig. 4, showing decoration following the natural spiralling contours with carved dragons, foliage and holes for fittings. Image © National Museums Liverpool, World Museum Liverpool and reproduced with permission.

undecorated, written sources suggest it was originally crimped in a crown of gold and stood on a gilded column in the church of St-Denis (Alcouffe 1991:310–311, no 68). Unlike processional staffs, this tusk was perhaps more readily accessible to visitors and parishioners as well as the monastic community of St-Denis. Although detailed information is lacking, such objects may have been used in both processional and static display, as in the case of narwhal tusks housed in the Basilica of St Mark in fifteenth and sixteenth-century Venice. By this time, St Mark's had transformed from the private chapel of the doge to the state church of Venice, but continued to represent the centre of political power and Venetian independence (Demus 1960:56). The treasury contains four objects described in inventories as unicorn horns; of those acquired in the fifteenth century, one is constructed from three pieces of narwhal tusk (measuring 1.35 m) and the other consists of a fossilized bone (Faidutti 1996), both decorated with ornamental and inscribed silver rings, whilst a rhinoceros horn and another narwhal tusk (measuring 2.34 m) were deposited in the sixteenth century (Hahnloser 1971:89–90). Written sources indicate



Figure 6. Detail from the lower half of the tusk Fig. 4, showing decoration cutting vertically through the natural spiralling contours with carved human figures, foliage and holes for fittings. © National Museums Liverpool, World Museum Liverpool and reproduced with permission.

the horns were displayed during public ceremonies in the sixteenth century, for example during the cavalcade accompanying the proclamation of the new law of the Republic in 1511, as well as in ceremonies associated with the feast of the Ascension – by this time one horn had been dyed with vermillion and in a later inventory the differing colours were attributed to male and female unicorns. Although these objects were housed in the doge's treasury and used in civic and religious processions, at other times their 'benefits' were directly accessible to Venetian citizens. It was, for example, permissible to grate their surface to collect a powder for medicinal purposes (Faidutti 1996).

All of these examples demonstrate that the distinctive morphological characteristics of the narwhal tusk were maintained and sometimes emphasized with additional decoration and fittings following the naturally spiralling contours. The combined evidence suggests these artefacts were displayed on ceremonial occasions, and at other times may have been displayed as static, attention-focusing devices. Combined with the intermittent designation of these artefacts in contemporary documents as 'unicorn horns', it is likely that a form of zoological identity was being assigned or constructed and that this was significant in the context of religious ceremony and display.

UNICORN HORN MORPHOLOGY AND SYMBOLISM

Detailed contextual information for narwhal tusks housed in medieval church treasuries is sadly lacking, and this presents a problem when attempting to reconstruct the symbolism and any related zoological identity that may have been attached to these artefacts. A number of 'unicorn horns' recorded in late medieval church inventories plausibly correspond to extant narwhal tusks in their collections, and in some cases it is possible to reconstruct their post-medieval history. There is no direct evidence that the two English tusks were identified as unicorn horns, however the diagnostic shape with 'spirals or rings' was first mentioned in isolated Classical sources and appears in medieval art around 1200, perhaps even as a response to the importation of tusks from Greenland (Gotfredsen 1999:152) becoming an established iconographic motif by the fourteenth century (Faidutti 1996). Although the chronology of the importation of narwhal tusks is vague – given the problems with dating – the earliest surviving examples have been dated stylistically to the twelfth century and subsequently all other narwhal tusks from medieval contexts with associated descriptions are referred to as 'unicorn horns'.

The unicorn is well known in medieval pictorial and written culture, particularly in the fourteenth and fifteenth centuries, whilst the absence of narwhals from western European art and thought is striking. In fact, the existence of the narwhal is not attested in any mainstream medieval European sources with the exceptions of Albert the Great's thirteenth-century *De animalibus* (24:84) where it is referred to as the 'sea fish bearing one horn on its forehead' (Kitchell and Resnick 1999:1693), and the mid-thirteenth-century *Speculum Regale*, which circulated widely in the north with surviving fragments identified from Norway, Iceland and

Sweden (Larson 1917:65, 122–123). The entry in the *Speculum* (XII) states that the narwhal is inedible, smaller than many whales, it tends to avoid fishermen and its tusk, described as ‘even and smooth as if shaped with a tool’, is carefully protected rather than used as a weapon. Such a detailed and relatively accurate account exemplifies one level of familiarity with this animal, although it is interesting that neither of these works refer to the striking spiral of the narwhal tusk. As a whale, the narwhal was classified as a fish – in both the *Speculum* and other works referring to marine fauna – and would become known as a ‘unicorn fish’ in later compendiums of aquatic life.

This has two implications; firstly that western European knowledge of the animal was restricted to Scandinavian mercantile and courtly circles – the origin of the narwhal tusk obscured by successive exchanges (Humphreys 1953:17), and secondly and perhaps more importantly, even if the artisans and consumers of these tusks were aware of their source, as narwhal tusks they would have been culturally redundant. When coupled with examples of unicorn horns represented by fossilized bone and tusks from other animals, it suggests that, guided by morphology, new identities were deliberately constructed and maintained. In many ways narwhal tusks, as objects communicating their meanings visually, were suited to religious contexts. Ivory, particularly when combined with precious metals, was regarded as an appropriate material with which to revere and praise the divine; in liturgical prayers ivory was a synonym for the chastity of the Virgin (Shalem 1998:146) and the luminous quality of its surface, particularly desirable from the latter half of the thirteenth century, naturally affected viewers’ perceptions of space and mood (Stahl 1997:96).

From at least the second to the third century AD, the unicorn was used to signify the invincibility and humility of Christ (Gotfredsen 1999:31–39) expressed in religious art in the respective motifs of the unicorn fighting and the unicorn’s capture (Grössinger 1998). The Christological significance of the unicorn was developed throughout the first millennium AD by influential writers such as St Eustace of Antioch and Bishop Ambrose of Milan. It was envisaged as a physically strong, even ferocious animal, and in religious contexts it came to embody the spiritual nature of Christ, and its primary weapon – the horn – was explicitly associated with divine potency, representing the centre post of the cross and the unity between God and Christ (Einhorn 1976; Gotfredsen 1999:31–39, 68).

The shapes and decoration of religious staff heads such as crosiers were permeated with meaning – the use of vegetation, snakes, dragons, Christological animals such as lambs, occasionally unicorns (Gotfredsen 1999:18), and various Biblical scenes suggesting that the upper reaches of the ecclesiastical hierarchy were increasingly representing themselves as a direct continuation of the Old Testament priesthood and the authority of Christ (Heslop 1994:43). In religious art, the unicorn was frequently represented vanquishing other beasts – manifestations of evil – with its horn. Interestingly, victory over evil was a recurrent theme on crosiers and it is possible to situate the unicorn’s horn within this genre; abbots and bishops were also depicted wielding their pastoral staffs as weapons against representations of vice. The unicorn’s horn not only represented Christ’s strength

and purity – the latter heightened by the whiteness of its surface – but its spiralled contours can also be linked to a broader pictorial vocabulary associated with religious structures.

Medieval architectural space was a ritual setting and associated symbolism was expressed in numerous decorative elements (Coldstream 2002:140). Spiral and cable patterns were incorporated into various architectural elements of ecclesiastical buildings from the late eleventh to the early thirteenth century, almost certainly inspired by the spiral Solomonic columns in St Peter's, Rome. This included decorative columns flanking portals such as the central door of the narthex of Ste-Madeleine in Vézelay, the north door of St Jacob in Regensburg, the cloister arcades of St John in Lateran and St Paul's outside the Wall in Rome, as well as piers in nave arcades, such as at Durham and Norwich cathedrals and the Premonstratensian Convent church at Strzelno in Poland.

Their specific spatial contexts suggest they may have functioned as signifiers of sanctified or otherwise distinguished areas (Ferne 1980:56). The sacred attributes of spirals are supported by a *vousoir* at Riccall (Yorkshire) which depicts Moses and the burning bush where the latter is represented as a spiral column, whilst on a font at Toller Fratrum (Dorset) three spiral columns support a double-bodied lion, interpreted as Christ in his ascended power (Wood 2001:9–11). Despite the absence of evidence indicating more specific symbolism it is likely that for artisans, their episcopal patrons and viewers of unicorn horns, the natural spiralling contours of these objects reinforced their holiness in religious contexts. This idea may be supported to some extent by the spiralling decoration on a range of liturgical objects such as crosiers (Alexander and Binski 1987:no. 257), as well as church furnishings such as candlesticks, tables and thrones found across high medieval Europe (Ferne 1980:51–53). Of course spiral ornament is not found everywhere but since artistic creativity was comparatively restricted in the construction of features being used in, or surrounding, liturgical rites (Sinding-Larsen 2000:74), it is likely that where it was employed it was fully integrated into the symbolism of religious ceremonial. In summary then, it is useful to consider the narwhal tusk in medieval religious contexts as an unusual, attention-focusing object with multiple levels of significance ranging from an expression of prestige to one of Christ's union with God. This is a far cry from the rationalist accusation of a mistake or sloppy thinking; instead it demonstrates the use of exotic animals in the active construction of material culture. Until the sixteenth and seventeenth centuries, a unicorn horn was far more useful to religious communities, congregations and seigneurs than a narwhal tusk.

THE ROLE OF COMMERCE

Although this article has focused on the utility and perceptions of exotica at both geographic source and final destination, thus shying away from traditional socio-economic interpretations of long-distance trade, it is essential to acknowledge the role of commerce in appropriations of both indigenous and exotic fauna. Commerce of course was only one of the ways in which exotica changed hands in

medieval Europe – live animals as primary or secondary acquisitions were exchanged as gifts between magnates whilst artefacts including components derived from exotica were sometimes included in marriage settlements and more frequently donated to church treasuries where a number remain extant. However, a significant proportion of exotica moving around Europe – including narwhal tusks – can be associated with mercantile activity.

At a time when trade was driven by consumer demand, exotica appear to have been targeted at specific markets at different rates (Spufford 2002:106–139). Demand for raw materials was relatively frequent and these were shipped to centres of production with concentrations of specialist craftsmen (e.g. Paris from the late thirteenth to the early fifteenth century), whereas demand for live animals, more expensive and difficult to acquire and transport, was far less frequent and these were moved along established trade routes to centres of wealth where sales were guaranteed, or to meet specific commissions. The presence of Barbary Ape remains in Southampton is unsurprising in this context – it was on the last leg of a Venetian trade route which stopped at multiple ports in the Mediterranean including north African centres such as Alexandria, which in turn provided a range of exotica as raw materials, body parts and live individuals (Spufford 2002:398–9).

Decisions about the modification of the morphological characteristics were therefore taken at many levels by both merchants and artisans – raw tusks reaching Paris from Alexandria or Acre via Marseille or Brugges were chopped up and reshaped before they reached London or Avignon as finished ivory products such as caskets, bearing little resemblance to their original forms. Likewise decisions made by hunters in the Greenland Nordestur and arctic coastal fringes of Norway to a certain extent dictated the range of walrus products – skin, tusks and skulls – however subsequent modification of the tusks, or the skull complete with the tusks, their decoration and presentation was mediated by artisans, merchants and consumers. There was clearly a demand for unicorn horns – not the teeth of narwhal which would have been of far less cultural interest or relevance in the major centres of medieval Europe – a demand stimulating the acquisition, transportation, selective modification and ultimate consumption of narwhal tusks as unicorn horns.

CONCLUSION

In their study of zoo culture and related animal classification, Mullan and Marvin (1987:3) concluded that ‘in an important sense animals are human constructions’. In this light, interpretations offered by archaeologists concerning human interactions with animals in the past represent a hermeneutic compromise between modern and (pre-) historic understandings of the natural world, bearing in mind that whilst the latter may be envisaged as something unfamiliar and ‘other’, it is nonetheless reconstructed in a form that is palatable to modern academic and public audiences. The integration of taxonomies of present and past societies is one example of this process – not all medieval unicorn horns were narwhal tusks but

all narwhal tusks appear to have been unicorn horns. By envisaging the physical remains of animals across the entire morphological spectrum as material culture, and by following the life history of any given body or part, it is possible to unify information otherwise pigeon-holed into what are effectively self-enclosed disciplines ranging from zooarchaeology through to artefact studies, in order to improve our understanding of each context from acquisition to deposition.

This does not mean that a consistent animal identity was retained throughout; indeed even with relatively common and familiar animals such as domestic ungulates, it is worth asking whether their derivatives in the form of bone buttons, knife handles, gaming pieces or leather shoes preserved any sort of zoological value or identity, and whether this changed from butcher to merchant to artisan to consumer. An elephant tusk was valuable because elephants happened to live far away and ivory happened to be a workable medium – hence their products were both rare and suitable for high quality carving. However, their identity was only visibly preserved in particular circumstances, predominantly in the twelfth century, a trend outnumbered by decisions to chop up tusks and recombine them into different shapes, peaking in the fourteenth century, and in both cases responding to what were effectively the demands of the market.

It is useful to consider the implications of modifications to shape, size, texture and colour without neglecting commercial value, ergonomics and aesthetics. In medieval Europe, exotica in all their various forms appear to have been predominantly used in social display, a cultural framework familiar to those working with art, heraldry, pageantry and ceremony. Their bodies were acquired, handled, processed, consumed and understood by different people at different times and places. As has been demonstrated by the sketched case study of the unicorn, and can be further demonstrated with, for example, elephants and griffins, the identities of exotica, their cultural importance, functions and commercial value were far from static and exemplify the active construction of animals within the framework of medieval visual culture.

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BIOGRAPHICAL NOTE

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ABSTRACTS

Narvals ou licornes? Animaux exotiques comme culture matérielle dans l'Europe du Moyen Âge

Aleksander Pluskowski

Résumé: Les animaux des contrées lointaines ont excité l'imagination des Européens durant tout le Moyen Âge. En effet, la richesse en matériel iconographique et en documents est considérable, et leur étude – sous tous ses aspects – procure un précieux aperçu de la conceptualisation de la périphérie du monde connu et de l'altérité de l'exotique pendant le Moyen Âge occidental. Toutefois, les restes physiques d'espèces non indigènes – aussi bien ceux récupérés dans des contextes archéologiques que ceux subsistant dans des collections privées – ont généralement été examinés isolément et n'ont que rarement été incorporés dans un cadre plus large étudiant l'accueil et l'utilité de ces objets exotiques. Cet article propose une nouvelle approche du sujet en focalisant sur l'identité zoologique des parties d'animaux exotiques comme 'culture matérielle'.

Mots clés: zooarchéologie, animaux, médiéval, exotique, culture matérielle, taxonomies, morphologie, licornes, narvals

Narwale oder Einhörner? Exotische Tiere als materielle Kultur des mittelalterlichen Europas*Aleksander Pluskowski*

Tiere aus fernen Ländern heizten die Vorstellungskraft der Menschen, die während des Mittelalters in Europa lebten, an. Dies wird durch einen bemerkenswerten Reichtum an ikonographischen und schriftlichen Quellen belegt, die von verschiedenen Perspektiven untersucht wurden und die wertvolle Einsichten in die westliche mittelalterliche Konzeptualisierung der Randbereiche der bekannten Welt und die Andersartigkeit von Exotika bieten. Dennoch sind die Überreste nicht-einheimischer Arten – aus archäologischen Kontexten wie auch aus privaten Sammlungen – im allgemeinen isoliert untersucht und selten in einen breiteren Rahmen eingebunden worden, der die Rezeption und Nutzung von Exotika erforscht. Dieser Beitrag eröffnet eine neue Perspektive zu diesem Thema, indem er einen Schwerpunkt auf die zoologische Identität von Körperteilen nicht-einheimischer Tiere als ‘materielle Kultur’ setzt.

Schlüsselbegriffe: Zooarchäologie, Tiere, Mittelalter, Exotik, materielle Kultur, Taxonomien, Morphologie, Einhörner, Narwale