The Role of Zooarchaeology in the Interpretation of Socioeconomic Status: A Discussion with Reference to Medieval Europe

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Introduction

Social inequality is ubiquitous in human society, and the concept of social standing has been of fundamental importance throughout time (Price and Feinman 1995). The inference of social status has encountered problems in many areas of archaeology (see Orser 1990; Grenville 1997), and the use of zooarchaeology as part of an integrated approach may contribute to our understanding of important issues (Crabtree 1990). This paper reviews the various criteria used to infer socioeconomic status from faunal assemblages, taking examples from a variety of contexts, but concentrating primarily on medieval Europe, and England in particular. The problems associated with the application of zooarchaeological methods to this sphere of research are discussed, and some possible solutions proposed. It is suggested that zooarchaeology can play an important role in answering questions relating to socioeconomic standing, provided that it forms part of a wider archaeological strategy.

What is Status?

Social status is difficult to define (see, for example Wason 1994), but can be broadly described as perceived position within a community. It may be dependent on political or economic standing, gender, occupation, ethnicity, or religion, and may be either achieved or inherited (e.g. Wason 1994; Sweeley 1999). Physical and mental attributes are also important if we consider groups that may be excluded from normal society due to disability (Hubert 2000). Status exists within different forms of hierarchy: military (e.g. King 1984, Stokes 2000), and civilian (e.g. Albarella 1996), ecclesiastical (Ervynck 1997; Loveluck 1997) and secular (eg Albarella and Davis

1996). These many facets interact together, making it difficult to ascertain the most important factors (e.g. Crabtree 1990; Reitz and Wing 1999; Hubert 2000).

It is important to make a distinction between wealth and social status, as the two are not synonymous (see Parker Pearson 1982). Clearly, it is possible that an individual or household may be socially powerful but economically poor. It is also plausible that the economically wealthy may fail to hold political or social weight. This difficulty of definition has led some (e.g. Wason 1994) to utilise vague, widely applicable terms such as 'eliteness'.

McBride and McBride (1987) propose that it was the development of world capitalism that led social and economic status to become intertwined, so that the term 'socioeconomic status' is only appropriate from the fifteenth century onward. In this paper I apply this phrase cross-culturally to mean an advantaged position within the community, whether that be based on social or economic factors. I use it purely as a classification tool, and do not imply any necessary link between the two factors. This facilitates its use in the following analysis of case studies from the Middle Ages.

Zooarchaeology and Socioeconomic Status

The fact that social differences are reflected in foodways is well established (e.g. Wason 1994; Gumerman 1997; Reitz and Wing 1999), and it is likely that the study of faunal remains and artefacts may tell us different things about status. For example, ceramic wares may indicate social aspirations as much as actual standing, although there is some doubt concerning their effectiveness in this capacity (e.g. Gibb 1996).

Singer (1987) suggests that people are less likely to exhibit aspirations or social pretension through the medium of food, given its relative invisibility to other people when compared to ceramics, clothing, or jewellery. While those of lower status may occasionally procure food that is normally unavailable to them, generally people will not dine on prestigious foods on a regular basis unless to do so is

within their means. While the display of aspirations of wealth through ceramics requires only the purchase of a few ornaments, to keep up the illusion of importance through food consumption requires the economically unsound continuous acquisition of high status products.

However, at many times in the past, feasting was of great importance. Feasts were ritual events, and were used as an opportunity for social display and affirmation of status (see Hagen 1994; Enright 1996; Hammond 1998). Thus, while the approach discussed in this paper is primarily economic, the importance of the role of food in display should not be underestimated.

Socioeconomic status may be expressed in a variety of ways. The identity and diversity of species exploited, the relative abundance of domestic and wild taxa in an assemblage, element distributions, and butchery marks may all reflect status-related practices. Meaningful conclusions may also be drawn from the age distribution and demographic composition of the assemblage. It is likely that in the future new techniques of analysis will be applied to the problem (Reitz 1987), but this paper reviews only the most frequently acknowledged techniques.

One of the important features of complex society is the presence of a well developed social hierarchy (Crabtree 1990; Price 1995). Thus, it is in the archaeology of chiefdom and state level societies that faunal studies can probably make the greatest impact on the problem of status. This paper reflects the sizeable body of work that has been carried out on medieval European sites, but also considers case studies from Roman and postmedieval Europe, as well as prehistoric and historic North America. Most of the techniques reviewed can be applied cross-culturally, but are subject to qualification. That is to say that some animals will always be valued more than others, but the specific taxa will vary from society to society (e.g. Crabtree 1990; Albarella and Davis 1996).

In particular, we might expect the hierarchical society of the Middle Ages to facilitate the laying down of recognisable indicators of social disparity (Mannell 1985). Although we should note that dietary

excess was somewhat frowned upon by the medieval church, the importance of food in the reinforcement of social stratification is clearly evident in the historical record. The sumptuary laws passed by Edward III provide a good example, as they stipulated the kinds of food appropriate to the people of a given class (see Pelner-Cosman 1976).

Much information relating to social stratification can be gleaned from the analysis of bones not explicitly related to culinary practice. For example, social differentiation may be apparent in the study of secondary products and crafts (e.g. MacGregor 1989). Animal products were a major component of trade in medieval societies, and the presence of workshops dedicated to the working of bone, horn, antler or wool may represent low to mid-status trades (see MacGregor 1989). The higher status members of society often wore furs, but evidence of cat skinning from cut marks on mandibles may indicate a trade to serve those that could not afford more expensive coats (Gidney 2000). However, these animal products may be subject to the same aspiration-related biases as other artefacts, and should be treated accordingly. In this paper, I am primarily concerned with assemblages that represent food remains. These can be analysed according to a number of criteria, the most important of which are reviewed below.

Taxonomic Composition

In medieval England, the ratio of wild to domestic taxa may be an indicator of status. Hunting seems to have been pursued chiefly by the upper classes, whereas the primary use of domestic taxa is generally indicative of low status, as it is more economical to spend time raising domestic livestock than hunting (Reitz 1987). Particular prestige could be assigned to wild animals that were dangerous, mobile or rare, and to animals that it was not energy efficient to pursue. Exotic animals might also have been coveted; a good example is the medieval importation of carp into western Europe (see Hoffman 1994). Ultimately what constitutes exotica is dependent on context, and we can never really be sure of how animals were classified in antiquity.

However, where historical records are available, we may gain some insight into the importance of particular species (see, for example Grant 1992). Interestingly, in Anglo-Saxon England, mutton and lamb are rarely mentioned as feast day foods, while poultry, fish, game, pork and beef are all documented (Hagen 1994). Hunting seems to have been an important aristocratic sport in England before the Norman Conquest, and bear, boar, and deer were all esteemed animals in this period (Wilson 1973).

The imposition of forest laws by the Anglo-Norman kings afforded the protection of noble game such as deer and wild boar (Manning 1993). Subsequent game laws also restricted the general availability of valued species (Manning 1993), and history consistently documents bacon as the staple meat of the peasant (e.g. Drummond 1957; Wilson 1973; Mannell 1985). By the end of the Middle Ages, meat was a little more widely available, and the control of forests was generally less brutally enforced than it was immediately following the Conquest (see Manning 1993). However, a survey of the historical evidence suggests that there was still a clear distinction between the foods of the rich and poor, both in England, and on the continent (see, for example Mannell 1985).

Faunal assemblages from many of England's high status medieval sites contain a high proportion of pig, deer and birds. These are animals from which meat is usually the most important product (Grant 1992). The rich could afford the luxury of non-working livestock, and could hunt for animals that may not have been nutritionally vital. Indeed throughout history the nobility have eaten the meat of animals that can have contributed very little to nutrition, but may have had prestige associated with them. The Romans imported thrushes, and if these were eaten it can only have been as a delicacy, as they do not afford much in the way of meat weight (Murphy et al. 2000). In the medieval period the meats of woodcock, partridge, plover and swan were all seen as high status products (Albarella and Davis 1996). Peacocks were often used as centrepieces of the feasting table, despite many references to the toughness of their meat (see Hammond 1998). However, the presence of domestic birds may not be a good indicator of status, as

chickens and geese could easily have been raised by peasants, being relatively inexpensive and easy to care for, while providing eggs as well as meat (Grant 1992).

Fish was an important component of the medieval diet, given the numerous fasting days imposed by the church (see Crossley-Holland 1996; Locker 2000). While eels, shellfish, stockfish, and herring may have been widely available (Crossley-Holland 1996), freshwater species such as carp and pike were primarily the food of the rich. Sturgeon, porpoise and whale were considered 'royal fish' in England, and though available on the open market, they had considerable associated prestige (Wilson 1973).

Deer bones are often found in large quantities at high status medieval sites like Okehampton (Grant 1992) and Launceston Castle (Albarella and Davis 1996). They clearly indicate high status, given the restrictions on hunting noble game discussed above. However, antlers are poorer indicators of status, as they may have been collected following shedding, and even butchered antler may have been traded through noble estates to lower class craftsmen (MacGregor 1989). Cervid bone, particularly with butchery evidence, is a much more reliable indicator of social position. Interestingly, significant amounts of deer bones are found at sites that are assigned low status on the basis of other evidence (Grant 1992; Crabtree 1990), and so the presence of prestigious animal bone may indicate poaching rather than a high socioeconomic standing.

Unfortunately, even when we are aware of the prestige associated with certain animals, high status sites may go unrecognised as there is always the possibility that people may not choose to display their status through the medium of food (Reitz 1987). Furthermore, increased wealth may merely be expressed as an increase in the quantity of low status foods rather than in the procurement of delicacies (Singer 1987). It is doubtful whether we could recognise assemblages from such households as pertaining to high socioeconomic status.

Moreover, interpretation of the taxonomic composition of an assemblage is not always straightforward, as uniformitarian principles may not be applicable to food procurement and consumption strategies. We should remind ourselves that foods that we may consider delicacies may have been commonplace in different time periods or environmental zones. For example, it is clear that marine molluscs were extensively used in the medieval period, even at inland sites, and it appears that oysters were more freely available than they are today (Albarella 1996). Similar problems may occur when attempting to transfer our culinary preconceptions to other parts of the world, so a good understanding of the distribution and availability of a variety of animals is vital (e.g. Albarella 1994).

Age Profiles

We have seen how the economic means to keep livestock solely for meat is a good indicator of status. Thus, age profiles may be of use in the inference of socio-economic standing in a variety of cultures. Manorial accounts from medieval England provide documentary evidence that harvest workers were often fed on the meat of animals too old to perform any other use (see Dyer 2000). Similarly, peasants generally would not slaughter their animals until they had exploited them to the full and it was no longer economical to keep them alive (Grant 1992). Conversely, assemblages from some production sites suggest that the culled product from the herd included a significant number of sexually immature animals (See for example Bond and O'Connor 1999). Unless replacements were brought in, we may assume that the herd could only be sustained if it was large enough to renew itself. Such large herds probably held considerable value, and would also have required access to large areas of land for grazing. Thus, it may be possible to infer the presence of wealthy or powerful livestock owners.

Age profiles may also help us to recognise high status consumers. Young animals such as goat kids were considered a delicacy by the medieval nobility (Albarella and Davis 1996; Albarella 1997a) whilst in twelfth to sixteenth century Zimbabwe the slaughtering of cattle during their prime was far more common at high status sites

that at those of lower standing (see Rackham 1994). These examples demonstrate how the selective slaughter of young animals may be seen as a mechanism for the display of wealth and power.

Species Diversity

The diversity of an assemblage may also be indicative of status (Reitz and Wing 1999). Assemblages from medieval and postmedieval urban sites typically show a wider variety of species than those from rural sites (e.g. O'Connor 1982; Richardson in press), and the diversity evident at castles and important households is greater still. For example, the sixteenth century assemblage from the Earl of Huntingdon's townhouse in Leicester makes a striking comparison with the material from other sites in the city. The Earl's House assemblage showed similar proportions of pig, cattle and sheep material, but contained several species that were entirely absent from the other urban sites, notably game birds and deer (Gidney 2000). Often disparities become apparent after quantification, even when patterning is not clear in species richness (e.g. King 1984). However, interpretation based on the range of species in an assemblage should always be tempered by the knowledge that any measure of species diversity is fundamentally dependent on sample size and, especially in the case of birds and fish, recovery method (Reitz and Wing 1999).

Bone Modifications and Body Part Representation

Element distribution and the anthropogenic modifications made to bones may also give us hints as to the standing of the people utilising a site (e.g. Albarella and Davis 1996; Richardson in press). Butchery marks may tell us if meat was acquired whole or as a particular cut, and this may be related to cost (e.g. Singer 1987). However, we may have little idea of the relative value placed upon different meat cuts in antiquity, and we should exercise caution when applying modern analogies, as we do not always know the dietary requirements or cultural and religious beliefs of the people involved (e.g.. Crabtree 1990; Wason 1994). Grant (1992) claims that in medieval English society there is little evidence that cuts of meat were assigned

different values, as a wide range of bones have been found at both high and low status sites. However, assemblages from castle sites often contain a preponderance of the bones from the hind quarters of deer, suggesting that the nobility were acquiring haunches of venison (e.g. Albarella and Davis 1996; Richardson in press).

The differences between chopping, skinning, sawing, burning and boiling may also reflect social stratification, but these variations may be so subtle, and subject to so many other factors that attempts to draw inference from them may be unsuccessful (Reitz 1987). Complete exploitation of a carcass for meat and marrow, indicated by heavily butchered, fragmented skeletons may suggest an exhaustive, possibly low status use of animals (Albarella 1996). We should consider other possibilities though; the destruction of bones may be related to specialised marrow processing or, in more recent times, glue extraction (West 1995). It should also be noted that broad patterns of butchery have changed through time, and are often affected by cultural changes (O'Connor 2000), so measures of fragmentation should always be considered within their own chronological context.

Important Considerations

There are a number of problems that pervade this area of zooarchaeology, some relating specifically to the study of socioeconomic status, and others that hamper our interpretation of identity whether we are interested in social standing, cultural character, ethnicity or gender. They include cultural, taphonomic and analytical biases (Reitz 1987).

Assemblage Formation

Regional availability is a major factor in determining what is considered a high status food, as are other environmentally determined conditions such as technological capacity and the ability to trade (Reitz 1987). Thus, the presence of a prestige animal in an assemblage may not reflect high purchasing power, rather that the animal is more readily available in the area than elsewhere. The

environment must also play a vital role in determining the possibilities of domestication of various species (e.g. Reitz 1999), and proximity to the sea is clearly a major influence on the perceived value of marine resources at a site (e.g. Crabtree 1990; Albarella and Davis 1996; Loveluck 1997).

Significant differences may be seen between rural and urban settings throughout history (e.g. O'Connor 1982, 2000; Loveluck 1997), and although these may be related to social status, we should take care not to treat them as proxies for this, as social stratification is influenced by many other factors (Reitz 1987). It may become clear that meat and secondary products were being taken from rural sites to the towns, and often from there to important, high status sites such as castles (e.g. Richardson in press). In many cases, rural sites may have been largely self sufficient, acting as providers to nearby consumer towns (e.g. O'Connor 1982, 1992; Albarella 1996; Loveluck 1997). We must then ask whether the rural settlements were simply providing the towns with their excess, or whether the urban settlements were claiming the finest meats. The two scenarios clearly reflect different social relations and ideas of control and power, and so are important in the issue of social standing on a large scale.

Town or regional scale restriction of access to foodstuffs may affect high and low status peoples alike. This may occur if there is some sort of ecological or geological catastrophe (e.g. Albarella 1994; Sandweiss 1996), or if urban settlements or castles undergo siege (eg Richardson in press). Although it is likely that even under these conditions there will be differences between the diets of those of high and low social standing, it is arguable whether or not we could detect what may be small variations, as they are subsequently affected by many other processes (Reitz 1987).

On a smaller scale, the local environment and the nature of the deposit are important. An assemblage may represent refuse from a variety of sources including household, butchers', or craft waste (e.g. MacGregor 1989; Rackham 1994; O'Connor 2000), and may also have a military or ecclesiastical source (e.g. King 1984; Ervynck

1997). Clearly then, the context and nature of deposition must have some bearing on how we interpret an assemblage in terms of socioeconomic status. While butchery marks, species representation and taxonomic composition may be of use in this respect, the primary concerns must be an understanding of the context and cultures being studied (e.g. O'Connor 1982; Loveluck 1997).

While large and small scale environmental factors clearly have an effect, so does human decision making. If the animals and animal products that were utilised by past peoples were consciously chosen, then those choices may reflect influences other than social or economic status (Reitz and Wing 1999). For example, ethnic and cultural preferences may be reflected in faunal remains, and while these may be closely intertwined with socioeconomic status and cultural identity, we cannot easily separate these factors. In addition, different interactions between the several components of choice may produce similar patterns.

For example, different ethnic groups may consume particular foodstuffs (e.g. Ijzereef 1989; Stewart-Abernathy and Ruff 1987) and although in many cases ethnicity may be linked to social or financial standing, we should be cautious not to confuse these two facets of identity (Reitz and Wing 1999). The problem may be particularly acute when studying periods of social change. As King (1984) noted, the Roman invasion of Britain brought two separate systems of social stratification together; the indigenous tribal hierarchy and the Roman state economy. Thus, procurement preferences may reflect large scale trends as much as individual choices (Gibb 1996).

Some sites may have a complex history of changing status. For example, after an early episode of high status, Launceston Castle went into a gradual decline, but its faunal record shows ambiguity, with occasional deposits of high status foods such as venison and plover persisting into later periods (Albarella and Davis 1996). This probably reflects the fact that the site retained an element of its original high standing, with guests feasting at the castle even as it fell into disrepair (Albarella and Davis 1996).

Preservation, Recovery, and Analysis

The complex relationships between the various cultural and environmental factors discussed above are rendered even more difficult to resolve by a series of preservational and analytical problems. As our subject of study is typically the altered remains of what was originally a meal, features of that meal that may vary significantly between social levels are now invisible to us (Reitz and Wing 1999; Crabtree 1990). These features include the method of food presentation, the way ingredients were combined, and the method of cooking (see Gumerman 1997). Although a little research has taken place into the detection of some of these facets of food consumption, such as the effects of different methods of cooking on taphonomy and preservation (e.g.; Lubinski 1996; Nicholson 1996; Speth 2000), thus far we are not close to being able to make inferences based on bone evidence alone.

For example, cooking with imported spices such as ginger and cinnamon may be a reliable indicator of high status (Grant 1992), but this is only detectable in the documentary record, and we often need complementary ceramic evidence if we are to understand preparation and serving techniques (Crabtree 1990). Likewise, it would be very useful to be able to infer methods of meat preservation such as salting and smoking, as large quantities of salt would be required for the long-term preservation of beef, and this could possibly be considered a preserve of those of high status (Albarella 1999). However, although artefactual evidence may help, at present the only reliable record of this practice is likely to be documentary (Albarella 1999).

In addition, many interpretative problems are caused by the differential survival of bone material, as chemical, biological, and physical processes act upon faunal remains inconsistently (Lyman 1994). For example, individual elements of one animal may be preserved to different degrees (Nicholson 1996), and bones of different species may show much variation. This gives rise to the problem of different taxa being differently amenable to

identification. Some animals that may be of use in the inference of status (imported cyprinids, for example) have few diagnostic elements and are therefore difficult to identify (O'Connor 2000). Furthermore, deposition in different environments may lead to preservational disparities, and fundamentally different death assemblages may be rendered superficially similar by taphonomic convergence. This leaves inter-site comparison subject to uncertainty, as differences in burial environment may preclude the application of cultural or socioeconomic interpretations to faunal contrasts (Lyman 1994).

Furthermore, comparison is only possible where recovery and analysis strategies are consistent between sites, and should only be made between samples of similar size. It is also fundamental that remains are recovered within a research strategy that is explicitly designed to include zooarchaeological analysis (Reitz and Wing 1999).

Even when recovery procedures are adequate, misinterpretation may occur at the analysis stage. It is important to realise the limitations of analytical techniques, and to take the cultural, taphonomic and structural context of the site into account (e.g. O'Connor 1982). Quantification is an obvious problem, as it may affect estimates of diversity, age profiles and relative body part representations. The limitations of the various methods are well reported (eg O'Connor 1982, 1985; Barrett 1993), and it is not appropriate to discuss them in detail in the context of this paper. The application of minimum numbers of individuals (MNI), fragment counts (NISP) and other techniques such as biomass estimation all have their restrictions and complications, which may lead to error in interpretation.

Before interpretation begins it is necessary to ascertain the risk of residuality by assessing how well sealed and tightly constrained in time and space the deposit is (Rackham 1994). In addition, the danger of interpreting a wild or intrusive animal as part of the cultural fauna is great, as the presence of just one or two examples of an exotic species may alter our perception of the status of a site (e.g. Albarella 1997b). We must also ensure that the deposits and structures under study are contemporaneous, as the status of a site

may change greatly over time (e.g. Albarella and Davis 1996; Richardson in press). Where this is not considered, any conclusions as to the status of a site are open to doubt (e.g. Parker-Pearson et al. 1996).

Discussion

Some (e.g. Reitz 1987) have seen these problems as grounds for pessimism. However, one can learn about social status by examining faunal assemblages, subject to certain caveats. The point is not that it is difficult to infer socioeconomic standing, rather that it is necessary to do so where possible. Where a site has little or no documented historic record (e.g. Bogan 1983), we rely on archaeology to tell us about its former occupants. It is not sufficient to merely examine artefacts for this purpose, and the greater the number of effective techniques that can be applied, the more chance we have of being able to develop meaningful interpretations (Albarella 2001).

Social inference is possible when carried out in conjunction with other areas of archaeology, anthropology, and history, but our efforts should always be that of a contribution towards understanding, rather than an attempt at cultural and social explanation in zooarchaeological isolation (Albarella 2001; Crabtree 1990). The most convincing work in this field integrates zooarchaeology, palaeoecology, artefact analysis, and structural archaeology, as well as documentary history (e.g. Welch and Scarry 1995; Loveluck 1996; Dobney et al 1998; Murphy et al 2000). Additionally, faunal evidence could be used in conjunction with art historical sources; the place of animals in iconography may tell us much about their relationships with humans, and thus their importance to society and associated prestige (e.g. Zimmerman Holt 1996).

It is neither necessary nor desirable to have a negative attitude towards the inference of status using zooarchaeological material (Crabtree 1990). It is important that we accept that there are multifarious processes acting on the formation of any given faunal deposit, but this does not mean that interpretation is impossible. It

simply necessitates a systematic approach whereby we control for every factor possible.

For example, preservational and recovery biases may be controlled for by inter-site comparison and a knowledge of taphonomic and recovery processes (e.g. Barrett 1997). Documentary and artefactual evidence may be used to control for cultural bias; we should ask if the assemblage we are looking at might reflect a multi-ethnic community, and if any of our findings correlate with known characteristics of any ethnic or religious group (e.g. Ijzereef 1989).

Control is more easily achieved if deposits are sealed and well constrained in time and space. In certain situations where this is not the case (e.g. Stewart-Abernathy and Ruff 1987), perhaps interpretation of social identity should not be attempted. Likewise, distinguishing social position from ethnic or cultural identity is likely to be speculative if we have no archaeological or historical record relevant to the site of interest. There are, however, many situations in which such interpretation can and should be attempted (e.g. Ijzereef 1989; Loveluck 1997; Dobney et al 1998).

A useful way of testing the reliability of our assertions is to apply zooarchaeological methods to recent material, where the fragmentary nature of the archaeological record is less pronounced, and we have documentary evidence of food prices or known social classes. Work on American slave plantations is especially useful in this respect (e.g. Crader 1984; Reitz 1987; Singer 1987), and has shown that, at least for this time depth, our methods are reliable. While the fact that our theories are supported by case studies from recent capitalist societies does not necessarily mean that they can be applied to the study of ancient peoples, it does suggest that our methods may at least be feasible when used with care.

Conclusions

The inference of social status is possible if zooarchaeologists apply a logical method to control for cultural, taphonomic and analytical biases, so that interpretative problems can be negotiated. Wherever possible we must work together with researchers from other

disciplines, as the use of documentary sources and complementary archaeological evidence is fundamental to our understanding of complex issues such as social stratification. Analytical techniques may improve in the future, and new criteria for the identification of socioeconomic differences may be discovered, but at the present time we should do what we can to advance the subject, rather than accepting defeat at the hands of multiple confounding factors. Zooarchaeology has the potential to contribute to the understanding of issues of past society and culture, and it is vital that this potential is exploited.

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