Abstract and Keywords

Brazilian zooarchaeology originated and primarily developed through the study of coastal sites. Shell-mounds were among the first archaeological sites to be identified in Brazil due to their visibility, aided by their size, prominent locations, and proximity to the coast. Since the seventeenth century, religious missionaries, travellers, naturalists, and researchers proposed explanations for the origins and significance of these shell concentrations. This chapter reviews theoretical and methodological changes in perspective regarding shell-mounds and presents recent developments focusing on the ritual aspect of these sites in Brazil. Site formation analysis based upon faunal remains has proven to be advantageous to discussions on shell-mound construction, function, and performance of feasts.

Keywords: shell-mounds, feasts, formation processes, ritual, Brazil

Introduction

SHELL-MOUNDS were among the first archaeological sites to be identified in Brazil due to their visibility, aided by their size, prominent locations, and proximity to the coast. Since the seventeenth century, religious missionaries, travellers, naturalists, and researchers proposed explanations for the origins and significance of these shell concentrations. Shell sites have many distinct forms and characteristics, ranging from large mounds that reached up to 50 metres in height, to small accumulations of shells barely discernible on the modern surface. The former sites, however, were (and still are) more alluring to researchers due to their physical characteristics and the lack of ethno-historical
information regarding their function and significance. For the latter, researchers rather rely on descriptions of their use as temporary camps.

Brazilian zooarchaeology originated and primarily developed through the study of these coastal sites. The element that unifies these sites is the presence of faunal remains as their main component, so a focus on these assemblages often spurred development of archaeological research. Faunal components of shell-mounds, as a consequence, have been used to categorize sites, define phases, reconstruct palaeoenvironmental conditions, and infer subsistence practices, among other issues. More recently, shell site analyses have contributed to our understanding of social organization and interpretations of ritual activities (Klokler, 2001; 2012; 2013; 2014a; Nishida, 2007; Gaspar et al., 2008; 2013; 2014; Klokler and Gaspar, 2013). Here the trajectory of Brazilian studies of shell-mounds is explored.

Aquatic Resources and Their Multiple Roles

Levi-Strauss (1962) highlights that animal species are selected not only for their nutritional or caloric values but also because of their importance within a determined cultural system. Little by little, this perspective also became salient in zooarchaeological studies exploring coastal sites, besides being good to eat and good to think with, we can add that some animals are also good for building; they provide useful construction materials.

Most Brazilian archaeologists, especially those influenced by cultural ecology, explained the presence of shells in shell-mounds as pure reflections of the diet of their creators and the surrounding environment (Lima, 1991; Bandeira, 1992). Shell-fish were considered a main staple, while fishing was argued to become an important activity only after 2000 BP. The massive amounts of shell valves found at these sites were directly attributed to the estimated quantity needed to fulfil the dietary needs of human groups.

Figuti demonstrated that coastal populations always relied heavily on procurement of fish for their subsistence (1989; 1993; 1995; 1998); his primary innovation was to treat the sites’s matrix as an artefact. Through the analysis of bulk samples, inspired mainly by the work of Casteel (1970), Bailey (1975), and Botkin (1980), and by transforming bones and shells into proxy measures of edible meat, Figuti was able to prove that previous interpretations of shell-mound groups’ diet were based on an impressionistic rather than quantitative approach. Through the use of this new methodology, Figuti affirms that the high quantity of shell-fish found in most sites (approximately 80% of the matrix) in fact
corresponds to only 15% of available meat, whereas vertebrates (mostly fish) account for approximately 80% of edible meat. The remaining 5% included mammals, birds, reptiles, and amphibians. This redirected questions regarding the importance of shell-fish.

Gaspar and DeBlasis (1992) and Afonso and DeBlasis (1994) proposed that large shell sites are mounded structures resulting from the organization of sizeable work groups following specific social rules, thus changing the perception that we had of shell-mound societies. Rather than small, mobile bands of fisher-hunter-gatherers, these populations are now understood as larger, more sedentary groups that not only dominated the coastal landscape but also transformed it through the construction of large features built using shells and fish bones.

The transformation in the study of coastal populations in Brazil is met with the broadening of research topics that use faunal remains to interpret the behaviours of shell-mound groups. Some authors focus on advancing the discussion about the connection between site formation and ritual uses of animal resources (Klokler, 2001; 2008; 2012; 2014a; Nishida, 2007; Plens, 2010; Gaspar et al., 2013; Klokler and Gaspar, 2013). This new focus explores the possibility that shell-fish found in shell-mounds could result from uses that did not directly involve consumption as food. As seen elsewhere (Claassen, 1998; 2010; De Masi, 1999; Klokler, 2001), molluscs and their shells have been used extensively around the world as bait, dye, medicine, containers, raw material for tools and jewellery, construction material, and pottery temper, amongst many other purposes. Claassen (1998) highlights the symbolism associated with shells in several societies and demonstrates that bivalve and gastropod shells are frequently linked to fertility, death, and abundance.

Shell Mound Construction: Why and How?

According to ethnographic and archaeological research, shell-mound sites can have diverse functions, being used for habitation (both short and long term), as workshops, as processing locations, as seasonal camps, and for burial, amongst other uses. If we can identify the human activities that established, created, and developed a site, we can also determine its function(s).

My research has focused on identifying the distinct forms of deposits composing these sites, and the activities responsible for creating them, in order to achieve an interpretation of the function of shell-mounds and their faunal contents (Figuti and Klokler, 1996; Klokler, 2001; 2008; 2012; 2013; 2014a; Klokler and Gaspar, 2013). The selection of shells as building materials demonstrates the central role of aquatic
resources, especially shell-fish for these coastal groups. Faunal analysis of assemblages from shell-mounds at Espinheiros II and Jabuticabeira II shows that the accumulations of shell valves forming mounds was not simply fortuitous, but was arranged according to specific sets of rules.

**Initial Research: Espinheiros II**

Changing the focus from subsistence to formation processes, Figuti and Klokler (1996) analysed materials from Espinheiros II, a site located in Santa Catarina state (Fig. 41.1). The layers from the site’s lower levels primarily consist of clam shells (Veneridae), with a high percentage (approximately 70% of the weight) of just one species of mollusc: the Carib or West Indian pointed venus, or *Anomalocardia brasiliana* (Fig. 41.2a). Mytilidae specimens are the second most common shell-fish at this site, accounting for just over 5% of the sample. In other words, intensive exploitation of *Anomalocardia brasiliana* banks occurred. Fish bones account for only 0.11% of the matrix components. Little evidence of activities related to subsistence was found in the lower levels of the shell-mound. For example, no artefacts were recovered from the samples analysed for faunal studies. However, remains of basketry were found in the two lowest layers. The base of the site, whose initial construction is dated at 2970 ± 60 years B.P (Afonso and DeBlasis, 1994), with layers composed almost exclusively of shell-fish remains (considered part of a ‘clean site’ according to the 1950’s typology; Gaspar, 1998), was a product of the construction of a platform above the mangrove, since there were no features or other signs of activities.

The upper portions of Espinheiros II site exhibited evidence of several features similar to what would be expected for habitation areas such as hearths, activity areas and artefacts. Also, there is an important change in the composition of the sediment: Veneridae (*A. brasiliana*), Mytilidae (*Mytella* sp. and *Brachidontes* sp.), and Ostreidae (*Crassostrea* sp.) (Table 41.1) specimens appear in relatively similar weight percentages (15%, 25%, and 32% respectively). At this point, collection is not solely focused on *A. brasiliana* in the mud banks, but is more diversified also exploiting mussels and oysters in the mangroves (Figuti and Klokler, 1996). In the upper layers, there is a significant presence of fish bones and otoliths (8%), confirming repeated fishing activities.
For the first time, research identified a shell-mound with two distinct sets of activities with specific purposes: initially, rapid construction of an elevated area, then a slower accumulation of materials from diversified day-to-day activities. Instead of random aggregates of refuse, large shell sites began to be interpreted as intentionally built structures.

Mounding for the Dead: Jabuticabeira II

Jabuticabeira II is a shell-mound site located in southern Brazil (Fig. 41.1) in a region that was dominated by a large palaeo-lagoon at the time of its construction (around 3,000 years ago). The area, conflating the coastal plain with a rich estuary, rivers, and easy access to a mountainous area, was very attractive to prehistoric populations and approximately seventy sites have been identified in the region. Jabuticabeira II is a medium-sized shell-mound, with a maximum height of nine metres and a footprint of approximately 100,000 m². Archaeological research began in 1997 and included the sampling, recording, and analyses of more than 350 m of profiles, eighteen trenches, and three excavation areas. The site has been extensively dated with over thirty radiocarbon dates on different materials such as charcoal, shell, and human bones. The oldest date for Jabuticabeira II is 2890 ± 55 (BETA A10633 on shell) while the most recent is 1400 ± 40 (BETA 234201 on bone collagen).
### Table 41.1 Species mentioned in the text recovered from Espinheiros II and Jabuticabeira II

<table>
<thead>
<tr>
<th>Common name</th>
<th>Scientific name</th>
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<tbody>
<tr>
<td>Carib or West Indian pointed venus</td>
<td><em>Anomalocardia brasiliana</em></td>
</tr>
<tr>
<td>Mangrove mussel</td>
<td><em>Mytella</em> sp.</td>
</tr>
<tr>
<td>Native mussel</td>
<td><em>Brachidontes</em> sp.</td>
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<tr>
<td>Oyster</td>
<td><em>Ostrea</em> sp., <em>Crassostrea</em> sp.</td>
</tr>
<tr>
<td>Thick lucine</td>
<td><em>Phacoides pectinatus</em></td>
</tr>
<tr>
<td>Southern oyster drill</td>
<td><em>Stramonita haemastoma</em></td>
</tr>
<tr>
<td>Catfish</td>
<td><em>Genidens barbus</em>, <em>Genidens genidens</em></td>
</tr>
<tr>
<td>Sheepshead seabream</td>
<td><em>Archosargus probatocephalus</em></td>
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<tr>
<td>Grunt</td>
<td><em>Haemulidae</em></td>
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<tr>
<td>Smooth puffer</td>
<td><em>Lagocephalus laevigatus</em></td>
</tr>
<tr>
<td>Atlantic spadefish</td>
<td><em>Chaetodipterus faber</em></td>
</tr>
<tr>
<td>Mullet</td>
<td><em>Mugil</em> sp.</td>
</tr>
<tr>
<td>Leatherjacket</td>
<td><em>Oligoplites</em> sp.</td>
</tr>
<tr>
<td>Weakfish</td>
<td><em>Cynoscion acoupa</em>, <em>Cynoscion leiarchus</em></td>
</tr>
<tr>
<td>Whitemouth croaker</td>
<td><em>Micropogonias furnieri</em></td>
</tr>
<tr>
<td>Black drum</td>
<td><em>Pogonias cromis</em></td>
</tr>
<tr>
<td>Ground croaker</td>
<td><em>Bairdiella ronchus</em></td>
</tr>
</tbody>
</table>
Snook       | *Centropomus* sp. 
---|---
Shorthead drum | *Larimus breviceps* 
Cownose ray | *Rhinoptera bonasus* 
Shark | *Selachimorpha*

After the results achieved at Espinheiros II, Klokler (2001) developed a mound-sampling strategy seeking to explore formation processes using faunal data. Using volume-controlled bulk column and ‘strategic’ sampling (samples from features such as postholes, hearths, and graves from profiles and excavation areas) allowed evaluation of the differences in proportions of animal remains in several areas of the site, possible changes through time, and distinction between and among features (both horizontally and vertically) (Fig. 41.3). Columns from three different loci, from the periphery and core of sites, were collected for an initial assessment of the site’s construction process.

Jabuticabeira II’s complex stratigraphy exhibits a pervasive combination of thick, mostly clean, light-coloured shell layers interspersed with thin, dark layers (Fig. 41.2b), topped by a dark-coloured fish-dominant deposit. The thick, shell-dominated layers enclose very thin dark lenses composed mostly of charcoal fragments and fish bones and are generally devoid of features. The thin, dark layers occur repeatedly along the profiles, both horizontally and vertically. They have variable thicknesses (rarely over 20 cm), are shorter horizontally than the shell layers, and include features such as hearths, postholes, and burials. Almost all burials originate from the dark compacted deposits, and these deposits have become known as funerary areas (DeBlasis et al., 1998). The frequencies of mollusc remains decrease sharply, from an average of 80% of the total components in shell layers, to 15% in the dark ones.
Analyses demonstrated that both types of layers had other significant differences in composition. The light-colored, thick, and loose layers include clam shells, mostly whole A. Brasiliana (many still articulated). By weight, this clam comprises around 60% of the bulk layers on average. Other molluscs, such as thick lucine (Phacoides pectinatus), native mussel (Brachidontes sp.), southern oyster drill (Stramonita haemastoma), oysters (Ostrea sp. and Crassostrea sp.), along with several species of gastropods (Table 41.1) account for 15% of the sample. As samples were collected closer to the site’s surface, frequencies of mussels increased slightly, while basal layers have the lowest amounts. However, it is unlikely that these differences were related to shifts in subsistence or collection strategies, since the same pattern occurs within some of the site’s internal mounds (Klokler, 2001) suggesting that patterns of mound building in the smaller mounds are reproduced in the large mound. The mollusc valves did not show signs of intentional breakage, exhibit low fragmentation rates, and just a small percentage (2%) show signs of burning. The fish remains recovered from shell layers include mostly estuarine species such as whitemouth croaker, catfish, black drum, and weakfish (Micropogonias furnieri, Genidens barbus and G. genidens, Pogonias cromis, and Cynoscion acoupa and C. leiarchus respectively) (Table 41.1).

These shell layers appear to ‘close’ the burial clusters located in the dark layers (Fig. 41.2c), and instead of being almost horizontal, they exhibit a mounded arrangement. Study of these shell layers indicates that the deposits were made through the collection, transport, and deposition of massive quantities of mollusc remains. The repetition of depositional episodes forming the layers and lenses of the site demonstrates that they were part of a long set of activities involved in the interment, mourning, and celebration rites for the deceased.
Analyses demonstrated that burials were made among large accumulations of fish bones, suggesting that the matrix composition of the dark layers corresponds to the remains of feasts (Klokler, 2001; 2008; 2012; 2014a). The shell layers represent repeated episodes of collection and transportation of massive amounts of molluscs used to cover the funerary areas or particular graves within funerary layers, while also adding volume to the mound. The collection of one particular species forming large shell deposits is similar to the lower levels of Espinheiros II.

Fish bone quantities greatly surpass amounts recovered from shell layers by weight. In contrast, few mollusc remains are recovered in these lenses; *A. brasiliana* and mussels account on average for 15% of the samples by weight. Weathering affects the surface of most of the shell valves (a brownish-reddish pellicle), as well as causing some loss of their calcium carbonate and other materials; this process seems to have been associated with higher organic matter content in the dark layers (Klokler, 2008). Most of the components in the funerary areas show varying degrees of burning, indicating differential processing of the remains.

Funerary areas include an average of 275 kg of available fish meat per cubic metre, enough meat to feed large gatherings of people, especially considering reports about fish consumption estimates in recent Brazilian fishing communities estimate daily consumption of approximately 130 to 400 grams per person (Mazzilli, 1975; Garcez and Sanchez-Botero, 2005). A detailed study of these lenses suggests that funerary areas were formed through the deposition of large amounts of food (mostly fish) in few occasions, corresponding to the interment of individuals. To illustrate the quantities of food available in these dark layers, within layer 2.25.11, which has an estimated size of 27 m x 5 m x 10 m and the lowest biomass value per cubic metre (according to Klokler, 2008), we calculated/estimated the total amount of food refuse deposited, and the corresponding fish meat available for guests would be more than one metric ton.

The excavation of 32 m\(^3\) of a dark layer revealed 28 hearths, 12 graves (including 21 individuals), and 384 postholes. Their spatial and temporal relationships confirmed the sequence of mortuary activities inferred from profiles. However, multiple test pits, extensive excavations, and profile analyses throughout the site were unable to identify evidence of daily domestic activities. Jabuticabeira II lacks domestic artefact assemblages and manufacturing debris, habitation floors, processing areas, and other features that would indicate its use as a habitation (Klokler, 2014a). The few artefacts recovered appear exclusively in association with burials, either as grave goods or in the immediate surroundings (Klokler, 2008). Grave goods were found in most burials and include personal adornments made of faunal and stone materials. Moreover, 73% of faunal artefacts are associated with burials, 68% of which are adornments recovered from graves (Hering, 2005). Shell beads comprise most of the adornments; gastropods (*Olivella*...
sp.) were largely used to manufacture the beads, while bivalves were chosen mostly to produce pendants. Of the total of artefacts recovered from Jabuticabeira II, 8% correspond to adornments made of mammal teeth (Hering, 2005). Bird long bones were chosen to make bone points, used as fishing implements. Almost 75% of lithic artefacts were recovered from funerary contexts at the site.

Conical features, believed to have been postholes, originate from the dark layers. Almost four hundred were recorded across a space of approximately 150 metres of profiles in just one area of the site. The depths vary between 6 and 82 cm. Postholes are found in association with graves and hearths (a characteristic also noticed in the profiles) and they often surround or mark these features (Klokler, 2001).

In general, the composition of the materials in features such as hearths, burial pits, and postholes closely resembled those of the funerary area matrix with minor—and expected—differences. Small and shallow burial pits were usually dug into the preceding shell layer, over which a subsequent funerary area developed. Similarities in the fish contents from burial pits and surrounding areas (the thin dark layers), and the slightly higher frequency of shells in burial pits, indicate that graves were filled with a mix of materials from the shell layer removed to create the pit, plus the faunal materials from the funerary surface that include the remains of feasts. Some graves contained large amounts of fish remains, particularly otoliths, and during excavation researchers noticed whole fish skeletons in anatomical connection (Table 41.2), suggesting that they might also have been used as grave goods deposited to surround the dead (Klokler, 2001; 2008; 2014a; 2014b). There was a higher presence of mammal and bird remains in graves compared to other site features and deposits (Klokler, 2014a).

Hearths were lit on top of, or near burial pits. Most hearths were 40 to 60 cm in diameter, and were sometimes superimposed, showing the importance of fires for the funerary process. Some hearths contained large amounts of ash, indicating not only that they were lit for an extended period of time, but also that they were most probably covered after use. Their small size and their location suggest that they were used for ritual fires to increase the visibility of the ceremonies performed at the funerary areas and not for cooking large amounts of food.
Table 41.2 MNI of fish recovered from selected burial pits at Jabuticabeira II. The taxa included in the various families are: Ariidae (*G. genidens* and *G. barbus*), Scianidae (*Cynoscion acoupa, C. leiarchus, Micropogonias furnieri, Pogonias chromis, Larimus breviceps*, and *Bairdiella ronchus*), Haemulidae, Mugilidae (*Mugil* sp.), Carangidae (*Oligoplites* sp.), Sparidae (*Archosargus probatocephalus*), Centropomidae (*Centropomus* sp.), Tetraodontidae (*Lagocephalus laevigatus*), Myliobatidae (*Rhinoptera bonasus*).

<table>
<thead>
<tr>
<th>Burial pits</th>
<th>Ariidae</th>
<th>Scianidae</th>
<th>Haemulidae</th>
<th>Mugilidae</th>
<th>Carangidae</th>
<th>Sparidae</th>
<th>Centropomidae</th>
<th>Tetraodontidae</th>
<th>Myliobatidae</th>
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<tr>
<td>101</td>
<td>46</td>
<td>32</td>
<td>6</td>
<td>26</td>
<td>34</td>
<td>168</td>
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<td>35</td>
<td>75</td>
<td>256</td>
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<td>34</td>
<td>168</td>
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Previously, the presence of hearths, the great quantity of faunal remains, and the dark compacted layers were taken as evidence that shell-mounds functioned as habitation areas. The small amount of artefacts in relation to the sites’ sizes was attributed to the shell accumulation, whose large volume masked the importance of lithic and bone technology. However, the recurrence of areas reserved for interments throughout Jabuticabeira II and the association of hearths and deposition of artefacts in these areas changed this perception.

Fishing activities that contributed to the shell layers seem to be the same as those described for funerary feasts. Fish size and species composition are very similar in both deposits, but meat quantities are lower in shell layers. Very low degrees of burning indicate that food refuse was not burned after consumption, indicating differences regarding refuse management.

The location of Jabuticabeira II at the margins of a large lagoon greatly facilitated the exploitation of molluscs and the transport of valves to the site. The use of A. brasiliana shells to build the mound can be explained by their ease of collection, and some of their properties. The shells are thick and light-coloured making them good materials for mounding, since they can add volume and retain some of the shape of the structure. The shells also provide good drainage and reflect light, making the mound even more visually distinctive in the landscape.

**New Research Focus: Micro Scale Analysis and Ritual**

Besides discussing the ritual aspect of fauna for the construction of shell-mounds, we should also include a smaller scale in which we could identify the ritual use of animal remains in shell-mounds. Otoliths are ubiquitous in all samples recovered from Jabuticabeira II and are commonly recovered in other shell sites. The most common otoliths come from whitemouth croaker (*Micropogonias furnieri*), catfish (*Genidens genidens*), black drum (*Pogonias cromis*), weakfish (*Cynoscion* sp.), and mullet (*Mugil* sp). At Jabuticabeira II, a total of 9,258 otoliths was recovered.

Otoliths are the second most common fish element at the site, following vertebrae. A greater amount of elements that occur in high numbers within individual fish, such as vertebrae, is expected. However, otoliths are only present in fish skeletons as pairs. If processing was a factor affecting the presence of otoliths, it would be expected that other cranial elements would also have high frequencies, since otoliths are located inside the neurocrania. Otoliths are concretions of aragonite (calcium carbonate) a composition similar to shells, which helps explain their preservation within shell-mound deposits.
Some interesting patterns emerge when considering deposition of these elements. On average, hearths have eighty-six otoliths per 8-litre sample, while funerary areas have sixty. Although otoliths are more common in hearths, these features do not contain an increased amount of fish bones. Their deposition in higher numbers in these features must have been intentional even though at this point we cannot identify clear explanations as to why this might be. Two burial pits (32 and 34) at the site contain over three hundred otoliths. Both graves are small and could not fit 150 whole fish, fish skeletons, or even fish-heads, suggesting that the elements were removed from the neurocrania and intentionally deposited within both contexts.

While the use of these fish elements has greatly helped researchers study fishing economies, less attention has been given to other possible roles that otoliths may have played in the past lives of prehistoric communities (Klokler, 2014b). Today, otoliths are reportedly used as a medicine and are added to little pouches or used in necklaces due to their purported magical powers recognized by fishing communities around the world (Klokler, 2014b). Historical and ethnographic studies in Brazil identify the use of otoliths for both magical and medicinal purposes. During colonial times, healers used these ear bones in divinatory sessions and to cure certain diseases (Souza, 1984). Fishing communities in northeastern Brazil still use otoliths in teas as a remedy for renal failure (Alves et al., 2007).

Due to their physical characteristics, such as smoothness and colour, these elements may have been perceived differently and assigned with powers by shell-mound groups. It is possible to suggest that part of the otoliths recovered from Jabuticabeira II (and other shell-mound sites) were collected, used, and deposited due to associations with healing, or other powers. Further studies, with inclusion of more sites and ethnographic reviews, could offer more information regarding the use of otoliths by coastal peoples.

A New Perspective, or Maybe Not: Ritual in Shell Sites

Ritual in shell sites has been gaining increased attention from researchers over the last decade, and published research, especially in the United States and Brazil, demonstrates the performance of feasts and/or funerary rituals as the main impetus for site construction (Klokler, 2001; 2008; 2012; 2014a; Luby, 2004; Claassen, 2010; Russo, 2014; Saunders, 2014). The ritual roles of mounds are now commonly discussed, if not widely accepted. However, the opening of more research topics is welcomed in the previously subsistence-dominated field. While the advancement of interest in the ritual aspect of
mounds gained strength during the late 1990s, some researchers had already began to debate this topic in the early nineteenth century.

Wiener (1876) identified the large shell-mounds in Santa Catarina State as mortuary monuments erected to honour the deceased members of society. He also first noted the association between dark lenses and the presence of human burials. Wiener’s close attention to the shell-mounds’ stratigraphy allowed him to identify sites that contained evidence of both daily activities and burials from shell-mound sites that were solely erected for the deceased (1876: 18). Lacerda (1885) and Ihering (1903) conceded that shell-mounds could have served as graveyards but Lacerda refused to identify evidence of their exclusive use as funerary loci while Ihering asserted that only large mounds were associated with burials (interestingly he never accepted the anthropic origin of the sites). Unfortunately, archaeologists from the twentieth century mostly ignored these early statements. The only exception was Paulo Duarte who put forth an interpretation of sites as graveyards in the 1950s (Duarte, 1967).

Tenório (1995) proposed that shell-mound clusters are associated with areas rich in resources, and therefore strategic for settlement. Mound building would then be a strong indicator of territoriality. In fact, recent research confirms that shell-mounds are not only powerful indicators of territoriality, reaffirming a groups’ privileged access to local resources, but their funerary character also reinforced the ancestral aspect of landscape dominance.

The selection of locations away from depressions, generally on terraces that provide good views of the surrounding landscape, is another important characteristic of shell sites. Many authors (Claassen, 1998: 231; DeBlasis et al., 1998; Klokler, 2001; 2008; 2014a; Villagrán, 2010; Saunders, 2014) identify the mounds as sites associated with the construction of a cultural landscape, with the mounds being territorial markers, probably associated with a group’s identity (Klokler, 2001).

Studies in Santa Catarina (Klokler and Gaspar, 2013) and Rio de Janeiro (Gaspar et al., 2013), reviewing previous analyses, demonstrate the presence of large quantities of fish bones associated with burials in some of the mounds recently identified as cemeteries, repeating a similar pattern found at Jabuticabeira II, notably in Cabeçuda (Santa Catarina state), Amourins, and Sernambetiba (located in Rio de Janeiro state) sites (Fig. 41.1). The recurrent presence of features with funerary characteristics and the lack of clear-cut evidence of habitation areas within or near the sites, allied with the rarity or absence of artefacts or features dissociated from the funerary layers, demonstrate the ritual nature of these sites.

At Amourins research indicates that large communal meals with a menu composed basically of catfish and whitemouth croaker were already held approximately 3,800 years
ago (Gaspar et al., 2013), more than 1,000 years earlier than the feasts held at Jabuticabeira II. Preliminary analyses from Sernambetiba, built between 2,600 and 1,800 years ago (Gaspar et al., 2013) and Cabeçuda, a large site with a date of 4120 BP (Rodrigues-Carvalho et al., 2011) indicate increased deposition of fish close to burials, though there is no clear evidence for feasting so far (Klokler, 2010; Klokler and Gaspar, 2013).

In these sites we can identify an inter-relationship between ritual, diet, and construction uses of faunal remains. The superposition of all these uses and activities shows us how they are not mutually exclusive and must be interpreted as part of the mortuary ritual of shell-mound groups.

The perspective that identifies shell-mounds as ceremonial structures suggests that their builders had a complex social organization and a sedentary lifestyle, as seen in the shell-mounds from the Archaic period in the Americas (Gaspar, 1998; Luby, 2004; Claassen, 2010; Russo, 2014; Saunders, 2014). Shell-mounds were locales for large gatherings, integrating people from different groups that inhabited the region during funerary events. These events served as a means to socially connect different groups. The feasts provided the perfect moment to form or reinforce alliances, exchange information, and reassure friendships. Since the mounds were composed of the remains of centuries of such events, they were public reminders of the importance of these relationships and a testament to their endurance.

Most importantly, the mounds also enclosed generations of groups’ members, augmenting their importance as sacred places. Shell-mounds modified and sacralized the landscape, also establishing the territory of these fisher-gatherer groups. Shell-mounds are links to ancestors and symbols of group aggregation and solidarity, as well as indicators of their relationships with the environment.

The results put forth the perspective that mollusc shells were used as construction material, and caution the dangers of simply equating a site’s faunal remains with diet, thereby expanding our understanding of the relationships between human groups and the animal world. This perspective forces archaeologists to see faunal remains as indications of a much richer relationship in which molluscs and fish were captured not only for their nutritional value but also because of their utility as building materials and their merit as sacred or meaningful elements. Aside from the recognition that animals symbolize ideals and beliefs, thereby expanding their importance to coastal groups well beyond their value as food, this perspective forces zooarchaeologists to face avenues of research that have not yet been fully explored.
Acknowledgements

The author would like to thank the editors for the invitation to participate in the volume and their comments on this chapter, as well as the financial support of CAPES (process 1501-02-0), NSF doctoral dissertation grant (SBR-0652177), and CNPq (processes 151457/2009-3 and 409428/2013-2). I am also grateful to David Mehalic, JR Pellini, and Gabriela Farias for their valuable help with the images.

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