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Interpreting Rock-Cut Grave Cemeteries: the early medieval necropolis and enclosure of São Gens, Portugal

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Interpreting Rock-Cut Grave Cemeteries: the early medieval necropolis and enclosure of São Gens, Portugal

By Stuart Brookes[1], Catarina Tente[2], Sara Prata[3]

Abstract

This paper seeks firstly to outline the archaeological evidence revealed by excavation and fieldwork at the site of São Gens (Guarda district) in central Portugal. Comprising an early medieval rock-cut grave cemetery and settlement, along with Roman and prehistoric evidence, the site is an exceptionally rich palimpsest of archaeological monuments. In the second part of the paper we attempt to address the problem of interpreting rock-cut grave cemeteries, and describe a spatial analytical methodology that draws comparisons with early medieval cemeteries in England as a way to enhance the information deficit of such necropolises. In light of these analyses, an interpretation of the São Gens site is offered in conclusion.

Keywords

Rock-cut graves; Portugal; Anglo-Saxon England; cemetery analysis; hunting settlement

Although they are recorded in several European countries, rock-cut graves are a particularly common phenomenon in the Iberian Peninsula. Here this type of funerary structure and its associated practices was a long-lasting tradition from the 6th to the 12th centuries AD. In many parts of Iberia rock-cut graves are the most abundant funerary remains left by early medieval communities. They are very common in central Portugal, where in the territory of Viseu (more than 6150 km^2) 522 sites with rock-cut graves are known, comprising more than 1726 graves.

As ubiquitous as they are, rock-cut graves are nevertheless enigmatic archaeological monuments that present a number of difficulties for interpretation. Unlike other early medieval cemeteries, most rock-cut graves contain no burials and analysis relies solely on the typological and spatial characteristics of the grave structures. Commonly, graves are hewn directly into natural rocky geology as straight-sided, ovoid, or body-shaped tombs, varying in depth from to 26 to 40 cm. In some cases graves are covered by rock slab lids, very occasionally they are constructed as double graves, but almost always the grave cut is all that survives. It is assumed, though by no means proven, that each once contained a body.

Most rock-cut grave sites are composed of fewer than ten graves, normally dispersed over an area. Only some have more than ten graves. Recently, Iñaki Martín Viso has forwarded a new classification of these sites in three main categories: isolated graves; ordered cemeteries; and disordered cemeteries.[4] Of these ordered rock-cut cemeteries are uncommon in western Iberia and are, in most cases, associated with churches or chapels, and may reflect a form of Christian devotion. Several rock-cut tombs are mentioned in the Bible, and these associations may partly underscore their widespread popularity. In England, the interpretation of rock-cut graves beside St Patrick's Chapel in Lancashire, have suggested that the graves could even have been reliquaries that became the focus of veneration.[5]

Such associations are uncommon in western Iberia where medieval rural churches are scarce both in the archaeological record and written sources, and were probably correspondingly rare in the landscape. Here, rock-cut graves are generally found as isolated graves or in small disordered groups dispersed in the landscape, usually in connection with areas of secular activity rather than with churches. Indeed, Martín Viso has argued that rock-cut graves in western Iberia should in general be regarded as a phenomenon in contradistinction to formal church burial.[6] Given their association with small habitations, it is likely that in Viseu this funerary behaviour is linked to local communities or even single households. It's interesting to note that these communities invested so much time and effort in funerary monuments when housing in this period was much more ephemeral. The durability and the location of graves was clearly intentional. Rock-cut graves were in many ways the most permanent and visible humanly made monuments in this landscape, and it seems likely that they were a focus for remembrance, expressing lineage, and perhaps a way of legitimizing control over land by specific kin groups. These forms of social expression were transformed after the 11th century, when the development of the parochial system, the tightening of ecclesiastical controls over burial, and the corresponding proliferation of churchyards, saw the abandonment in most places of rock-cut graves and an end of field cemeteries. Churchyard burial marked a distinctive shift from earlier practices in which burial sites were created by families and local communities, presumably as an expression of household/community identities, to one in which these identities were sublimated by a higher Christian doctrine.[7]

In light of this association, questions arise about the types of communities being buried in this way. Can rock-cut graves be used to reveal aspects of demography and social organisation typically inferred from other types of early medieval burial or is the evidence

too partial to allow for such analyses? The lack of their original contents—human remains, personal effects, or other fills—means that it is difficult to establish a precise chronology for graves either within cemeteries or on a wider regional basis. Nor is it possible to derive any information about the social identity of the buried individual. On its own, the archaeological evidence would seem to be insufficient for a plausible analysis of past social structure, demography, or group composition, without recourse to other forms of data. This paper argues that the excavation of neighbouring settlement sites opens up one possible line of analysis. Comparison with other early medieval cemeteries provides another.

Amongst the many rock-cut grave sites in Viseu is that of São Gens, located 2 km from the village of Celorico da Beira in Guarda district (Fig. 1). Situated in the upper Mondego river basin, the site extends over a large area (around 30 ha), and comprises several monuments: an early medieval rock-cut grave cemetery and settlement enclosure; two areas of Roman occupation; and a small natural rock shelter with evidence for prehistoric occupation during the 4th millennium BC. Separate excavations took place at São Gens between 2008 and 2013 at two areas *c.* 100m apart focussing on the medieval settlement and Roman farm structure respectively. The Roman site was excavated by António Marques and results obtained so far indicate the site's abandonment in the late 4th or early 5th centuries AD.[8] In this paper, only the medieval occupation of the site is discussed.

Excavations and fieldwork on the early medieval occupation at São Gens have focussed on the rock-cut grave cemetery and settlement enclosure (Fig. 2). The former is the largest complex of rock-cut graves in central Portugal (Fig. 3); the latter is a small walled settlement nestled between a group of large granite boulders. Excavation of the settlement site provided evidence for its occupation in the 10th century AD. Whilst it cannot be proved, the close spatial association between the settlement and the nearby cemetery suggests that it was used contemporaneously with the settlement; the two sites thereby representing the living and buried community of the Mondego valley in the 10th century. The argument for believing this to be the case, are outlined below. The exceptional size of the São Gens necropolis, the association there of a cemetery and an excavated settlement site, and the possibility therefore of bringing new archaeological data to bear on the question of cemetery use and community structure, provide the context for this article.

This paper resulted from a discussion within the final work seminar of the project *Tumbas e identidades locales en el centro de la península ibérica altomedieval: análisis espacial de las*

tumbas excavadas en roca directed by Iñaki Martín Viso and financed by the Spanish government.[9] The seminar's aim was to bring researchers together to address the complexity of the rock-cut grave phenomenon and proffer new methodologies to the study of this enigmatic monument type. We argue that detailed analysis of a single site makes possible a clearer definition of the burying community.

In order to aid analysis, comparisons are drawn here between the rock-cut grave cemetery of São Gens and early medieval inhumation cemeteries of southern England, with a particular emphasis on spatial analytical approaches. Other cemetery data from different regions could also have been used for comparison. Rock-cut graves do, of course, exist in western Britain, as already alluded, however, these traditions are dogged by the same issues of an absence of assemblages and thus chronology, and moreover, their common associations with early churches makes them a better comparanda to Iberian 'ordered cemeteries'. Alternatively, numerous field cemeteries with no apparent relationship to churches exist in Merovingian, Alamannic, or northern Italian contexts; however, these typically comprise far larger numbers of graves than occur in Iberia, and have a general tendency towards ordered row-grave arrangements that contrast markedly with the disordered pattern so characteristic of rock-cut grave cemeteries. As the techniques described below are used to analyse the spatial shape of the cemeteries, that is to say the outward appearance of graves within the necropolis, comparisons should only be made with complexes that ostensibly display a similar morphology. In terms of size, form, and setting, early medieval inhumation cemeteries in southern England are—at least at face-value—very similar to rock-cut grave cemeteries.

Clearly, the English material differs from Iberian cemeteries, in that rock-cut traditions are not present; nor do they persist as long – most Anglo-Saxon cemeteries go out of use by the seventh or early eighth centuries, whereas rock-cut traditions sustain for much longer, with evidence that the practice continued even in the tenth century. By this time in England, churchyard burial had become the norm. Arguably, the field cemeteries of Iberia represent a long-lived tradition of community burial outside of the constraints of churchyard rules, where burial modes (location, funerary architecture, rites) were largely determined by individual communities. This situation has strong parallels with that existing in early Anglo-Saxon England. Though we don't seek to draw a direct analogy, we argue that the well recorded, detailed and rich data set that has allowed archaeologists to speculate extensively on social structure and social arrangements in England, can be used to explore the funerary norms and traditions underpinning the rock-cut cemetery tradition.

We argue that this spatial analytical perspective of the cemetery arrangement, coupled with an interpretation of the social and community structure of the São Gens settlement, leads to a more nuanced appreciation of the architecture and setting of the rock-cut grave cemetery. This cross-cultural and cross-chronological perspective, we suggest, opens up debates around the potential uses and meaning of such sites, and offers a rich field for comparison.

In the discussion we compare the results obtained in the spatial analysis of the necropolis and in the excavations carried out in the housing area. We suggest an interpretation of the size and constitution of the community that occupied the site, and set our findings in a regional historical context.

[Level 1 header] EARLY MEDIEVAL SÃO GENS

The rock-cut graves at São Gens are cited in several early works. They are first mentioned in 1873,[10] appear in a monograph of local antiquities published by Manuel Ramos de Oliveira,[11] and feature again in 1953 in a work concerning the Roman road system.[12] São Gens is also mentioned in Adriano Vasco Rodrigues' regional history.[13] Despite being reasonably well known, the first modern archaeological work at São Gens did not take place until 1993, when a field survey was undertaken, promoted by the municipality of Celorico da Beira.[14] This was followed in 2006 by a survey aiming to identify and record all the grave structures.[15] Between 2007 and 2009 São Gens was a case-study in a larger research project, entitled *High Mondego Basin: Frontier between Christians and Muslims*, funded by the Portuguese Foundation for Science and Technology,[16] which aimed to understand settlement strategies in this region between the 5th and 11th centuries AD. Archaeological excavation was carried out in 2008 and the results were integrated into one of our PhDs.[17] Further fieldwork over the following years was enabled by the *Tumbas e identidades locales* project. Finally, in 2013, São Gens was included in a new project directed by Catarina Tente, entitled *EICAM – Interdisciplinary Study of Early Medieval Communities (5th to 11th centuries): the particular case of Viseu's territory,* financed by the Calouste Gulbenkian Foundation.

[Level 2 header] THE SETTLEMENT

Medieval occupation at São Gens is evidenced by a settlement enclosed within a walled oval perimeter lying to the northwest of the extensive rock-cut grave cemetery. Around 0.5 ha in size, the enclosure contains within it a large number of granite boulders and evidence for hut structures. Test pitting inside and outside the enclosure confirms that occupation was concentrated within it; no evidence for habitation was identified in any test pits located outside the perimeter. Although the occupational area was concentrated, the cemetery was not: the graves are scattered across an area of 6 ha.

Two sectors were excavated inside the settlement, which clarified the arrangement of the defences. A wall of 1.0–1.5 m height was surmounted by a timber palisade, burnt remains of which were found during excavation. The palisade was constructed from wooden trunks of Pyrenean oak (*Quercus pyrenaica*) and holm oak (*Quercus rotundifolia*), forming respectively 84.2% and 13.2% of the charcoal assemblage.[18] The oval enclosure had a funnel entrance, with an atrium or entrance patio to the northwest (Fig. 2). The main entrance was protected by a pair of high granite boulders supporting a wooden platform. The purpose of the defences is unclear. Despite the formidable form of the enclosure, its position does not provide an obvious strategic advantage. The enclosure is situated in a valley bottom on the right bank of the River Mondego. It is almost imperceptible in the landscape, with very limited visual control over its surroundings. All the same it would seem to be too monumental a structure to have had only a utilitarian function protecting livestock or keeping out wild animals.

Excavation revealed evidence of several domestic structures constructed near the granite outcrops closest to the inner face of the outside perimeter. No structural evidence for walls, hut circles, or post-holes was identified, but the presence of fireplaces, together with spreads of material culture, can be reconstructed as the floors of former huts. It is likely that the structures were constructed entirely in perishable organic materials, the remains of which only survive in cases of fire-induced preservation. Local ethnographic evidence provides interesting parallels that help us understand and reconstruct the archaeological record (Fig. 3). Ethnographic work on traditional Portuguese rural architecture describes a type of conic hut known as a *choupana*, constructed entirely of wood, broom, and other organic materials. *Choupanas* are self-supporting structures with a circular base that were placed directly on the ground without recourse to any earth fastening.[19] The excavated areas have revealed evidence for three domestic units/huts of this type, from which we estimate the simultaneous presence of four to six families inside

the enclosure. Test-pitting outside the enclosure failed to identify any evidence of either further habitation or waste disposal.

The paleoenvironmental record shows that the São Gens community used trees and bushes from the surrounding woods and river valleys.[20] Woodland provided the main source of raw materials—wooden poles (*Quercus pyrenaica* and *Quercus rotundifolia*) used in the palisade and huts—and was interspersed with marquis and semi-open areas that were the source for brooms. It is likely that everyday objects, such as bowls, cups and plates were also made from wood and cork, as these vessel types are absent from the pottery assemblage. Woodland was also exploited for firewood used for heating and cooking, ironworking and pottery manufacture. The 2012 campaign revealed a great number of exceptionally preserved faunal remains—currently the subject of specialist research—which will provide further insights into the economic practices of the São Gens community, but preliminary results show the assemblage to be dominated by wild game (boar, red deer, and fallow deer).

Chemical analysis of the clays used in the pottery demonstrated evidence for local production, with no clays from outside the territory exploited.[21] The most common vessels are pots, necked pans, jars and basins (so-called *alguidares*, which are the most characteristic ceramic forms in the region at this time). The community probably produced its own textiles; several spindle whorls (made of bone or clay) were identified, documenting the manufacturing of linen and/or wool. Iron objects were also produced at São Gens: nails, tacks, knives, sickles, hatchets, needles and buttons, were recorded, along with evidence for ironworking. Although the excavations did not reveal an actual forge site, both metal slags and forge bases are present. These metal finds are currently being analysed.

The stratigraphic sequence is limited and there is little sign of any occupational sequences. Stratigraphical evidence is visible in only one of the hut structures, where an early round fireplace was later enlarged to twice its original size, and in an oval shape. From the datable material culture and radiocarbon dates, it is clear that occupation of the settlement restricted itself largely to the 10th century. Two radiocarbon dates were obtained, one from a sample of oak charcoal collected from a fireplace located next to the inner side of the palisade (Wk-27455), and another from a piece of cork found in a layer of the collapsed palisade (Wk-25175) (Table 1).[22] The latter provides a date for a great fire, around the second half of the 10th century, which was responsible for the complete destruction and abandonment of the site.

[Level 2 header] THE NECROPOLIS

The São Gens necropolis consists of 54 graves cut into exposed granite residuals surrounded by patches of more readily weathered underlying bedrock, on a gently sloping southeast-facing valley side (Fig. 2). The number of graves may originally have been slightly higher, since we know from oral traditions that some graves were destroyed during the rock extraction for the construction of an olive oil press, located near the site. According to the classification system proposed by Martín Viso, São Gens belongs to the category of 'disordered rural cemetery of more than 10 graves'.[23] Such cemeteries consist of small groups of graves that share a common burial locale, but whose layout does not appear to follow any regular pattern.

The grave cuts demonstrate certain morphological characteristics that allow them to be grouped into types (Table 2). The most relevant distinction is between graves that have anthropomorphic features (body-shaped form with head and/or feet defined), and those that have a regular ovoid or rectangular shape (i.e. non-anthropomorphic). Non-anthropomorphic grave cuts represent 52% of the total, with some degree of variability within this category. The 23 anthropomorphic graves can be further divided into several subtypes, e.g. head-cut defined, head and feet defined, etc. Based on their dimensions, 6 of the 54 graves (11%) would appear to belong to children; ranging from 64 cm (grave 41) to 125 cm (grave 13) in length. In addition, there are six unfinished graves, two of which are child sized (<130 cm in length).

Grave orientations are very diverse, with orientations in almost every direction represented, although the majority of graves face east, northeast, or southeast, in possible adherence to prevailing Christian practice. Some graves are relatively isolated, others are grouped into small clusters of up to nine graves. Within the small groups, graves show some sign of patterning, however the level of dispersion and the general layout of the graves suggest that there was no formal organisation of the funerary space. Certain graves appear to be associated with other features. Some of the graves cluster on a distinctive mushroom shape stone known as the 'Pedra do Sino' or 'Bell-Stone' (Fig. 4). This cluster (Nos 9 to 26, table 2) has 18 graves, including six graves that have an anthropomorphic shape and 12 non-anthropomorphic graves. Another clearly distinct cluster is defined by seven graves (Nos 1 to 7, table 2) located near the enclosure. All of the graves are located outside the palisade, close to the only entrance into the enclosure. Some are directly beside the palisade's base of small rocks.

A new approach to analysis

Given their lack of contents, interpretations about the possible group structure of the burying community is very problematic. Apart from the form of the grave, the only characterisations that can be made from which to interpret social identity and structures existing within the burying community, are grave location, the relationship with other graves and features, and the overall pattern of the cemetery. In this regard, the arrangement of graves at São Gens can be compared and analysed in relation to other early medieval cemetery layouts, where surviving grave contents and skeletal information provide addition bases for interpretation. Early medieval inhumation cemeteries from southern England are appropriate comperanda for several reasons. Like São Gens—and unlike contemporary churchyard burials, 'ordered' rock-cut cemeteries, or Frankish row-grave cemeteries—many Early Anglo-Saxon cemeteries have burials laid out in a variety of orientations and distances from each other. Although they are buried in the earth, graves in Anglo-Saxon cemeteries rarely intercut, implying that they were demarcated above ground and arranged to some form of spatial logic.[24] Characteristics of burial, such as grave density, distance to other burials, orientations, might be ways in which real or imagined associations were made between the dead. A number seem to have been subtly attuned to their landscape context, whether features, such as physical ancient monuments or routeways, or natural terrain.[25] These associations and relationships are potentially recoverable by formal techniques, including pattern analysis, movement and visibility studies, along with many other spatial analytical methods, more of which below.[26]

Our second method, the comparison between the settlement and cemetery evidence, can also be strengthened through analogy to Early Anglo-Saxon England, for again there are several points of similarity. Early Anglo-Saxon cemeteries are often in close association with contemporary settlements,[27] and also often appear to be small buried communities, so similar issues of individual/community identity are likely to have been expressed. The absence of any obvious influence of the church upon burial practices is also noteworthy, and strengthens the belief that funerary rites in both contexts largely depended on individual or local initiatives. The following section describes how early medieval burial traditions in southern Britain might inform our thinking about São Gens.

Early medieval burial traditions in southern Britain and São Gens compared

Typically, most inhumation cemeteries in England are small, with around 30–50 graves. Occasionally there are up to about 200 graves but this is relatively rare. Whilst many rock-cut grave cemeteries in Iberia are much smaller than this, São Gens—with 54 graves—fits reasonably well into the range of southern English cemeteries. Unlike São Gens, Anglo-Saxon examples can be dated to a period of use from the buried material culture. Most appear to have been used for 150–200 years, so if these burials represent complete communities, then they were very small.

There are differences. Typically, there is a general under-representation of children in Early Anglo-Saxon cemeteries.[28] Mathew Kuefler suggests that there was a different attitude to children brought about by Christianity.[29] Certainly, six infant graves (11% of the corpus) at São Gens is a better reflection of a living community, but still under-represents the likely levels of pre-Industrial childhood mortality. Demographic simulations from the eighth-/ninth-century cemetery of Bärenthal (southwest Germany), suggested mortality of 26.6% before the age of 4,[30] a figure comparable with that of the medieval churchyard of Wharram Percy (North Yorkshire, England) where 19% mortality before the age of two was suggested.[31] It may be that stillborn and very young infants were not buried in individual rock-cut graves. In English contexts, many infants are buried with adults. At Wharram Percy it was estimated that 9.8% of the buried community were foetal or stillborn and a further 13.5% died within six months of birth.[32] Combining these sorts of figures with the evidence for child graves at São Gens suggests that the cemetery may indeed reflect a living population in a stable state.

Unlike rock-cut cemeteries, dating evidence from Early Anglo-Saxon burials allows us to refine the chronological development of such sites. On average we can speculate that these represent the buried plots of small living communities of around 20 to 40 individuals, or two to three extended families.[33] This is a calculation that can in some cases be substantiated by osteological data.[34] Given the existence of child burials it might similarly be argued that the 54 graves of São Gens represent a community of *c.* three households over three or four generations. It may be that rock-cut graves were reused over time: in less acidic areas of Iberia undisturbed rock-cut graves are sometimes found with bone material. In these cases, skeletal material suggests the graves may have been reused two or three times with bones of earlier burials found in a heap at the foot of the cist. Even if graves were reused several times, one would have to multiply upwards by a factor of three or four burials in each grave to imagine a living community of much more than a 100. The

likelihood remains that the socio-economic units represented are those of just a few households.

Individual graves in both England and Iberia can be regarded as having a landscape presence. Evidence for kerb slots, post-holes, barrows and other above-ground structures is well attested, supporting the idea that cemeteries were landscape features that were designed to be encountered by the living, with different lines of sight, views, and movement a significant component of the burial experience. A feature of the São Gens necropolis is the focus and orientation of many of the graves on the distinctive 'Pedra do Sino'. Many Anglo-Saxon scholars have argued that the physical association between burials and pre-existing natural and humanly made monuments may reflect a desire to make memorial associations with the local landscape, perhaps for the purposes of laying claim to, or exerting dominance over, them.[35] Similar intentions may apply at São Gens. Howard Williams has observed that the archaeological remains of a grave represents one aspect of an extended ritual process of remembrance and commemoration.[36] As recognisable above-ground memorials rock-cut graves accentuate this point. The physical and time-consuming act of cutting graves in granite might have served to emphasise the permanence of these associations in long-term memory. Given the labour involved in carving graves we cannot be sure whether graves were cut at the time of a persons' death, whether they were major projects commissioned during a persons' lifetime (in which case what is to be made of child graves?), or even whether graves were reused through time.

Analysis of Early Anglo-Saxon cemeteries has emphasised that the layout and furnishings of burials were means by which burying communities presented aspects of the deceased's social persona, such as their status, gender, age, and position. Importantly, for such statements to have the desired impact, cemeteries needed also to be visible, and in Anglo-Saxon England the location of burial sites close to routeways or in prominent locations is a well-recognised phenomenon.[37] The layout and position of burials in a rock-cut grave cemetery are likely to have had an even greater significance than those of below-ground burials. Many scholars have observed that spatial differentiation within cemeteries may in some cases reflect social differentiation.[38] In Early Anglo-Saxon cemeteries 'high-status' assemblages are commonly associated with individuals occupying central or focal positions within the cemetery. The ability to date graves through their grave-goods further allows for an analysis of the diachronic development of the cemetery plan through time.[39] In several cases early graves have been found to form the basis of plots or groups of burials, with clusters of burials seemingly based on high-status founder graves. Again, this

is something we are unable to do at São Gens, where the final phase concatenates all graves into a single plan. This same property means, however, that rock-cut graves retain an architectural presence, so that our contemporary experience of the cemetery layout closely approximates that of the burying community.[40] Whilst alignments, clusters, orientations and associations are commonly assumed to have existed in below-ground cemeteries, similar interpretations are justified at São Gens where movement between and around graves is still today determined by the *mise en scène* of grave structures, layout and terrain. Although we do not have the contents of these graves, observations can be made about grave construction, the position of the grave in the cemetery, its physical association with other graves, or orientation. Through the comparative study of the placement of burials it may therefore be possible to gain insights into the social make-up of these communities.

Structuring Principles at the São Gens cemetery

In the following discussion architectural aspects of the São Gens cemetery are explored to consider some of the possible structuring principles of the site. The analysis relies on a theory of the human use of space commonly referred to as 'space syntax'. The main theoretical tenets of space syntax were laid out in Hillier and Hanson's *The Social Logic of Space* and its relationship with architectural practice further developed in Hillier's *Space is the Machine*, in which it is argued that the nature and use of space carries 'cultural information in its form and organisation'.[41] The approach comprises a number of methods, reasonably well established in archaeological practice (in particular 'justified graph analysis'[42]). This paper applies 'visibility graph analysis', making use of software platform *depthmap*, available from the UCL Bartlett Space Syntax Laboratory (https://www.bartlett.ucl.ac.uk/space-syntax/research/projects/ucl-depthmap).

[Level 1 header] SÃO GENS: A SPATIAL ANALYSIS OF THE NECROPOLIS

The selection criteria behind the location of each cluster remains unclear and the same can be said about the specific position of each grave within the cluster. Nevertheless, one thing is clear: the locations and orientations of graves obey some pre-established logic, and this in turn may also have governed behaviour inside the settlement.

The position of the graves at São Gens is partly determined by the location of suitable rock, partly by the configuration and form of the outcrop and its accessibility.

Some potentially suitable rocks were evidently eschewed, supporting the notion that other structuring principles were also at work, including perhaps orientation, intervisibility, prominence, and clustering.

With regard to the latter, kernel density plotting, following a method carried out on four Early Anglo-Saxon cemeteries by Sayer and Weinhold,[43] allow us to easily visualize and define areas of clustering within the cemetery, and opens up further points of comparison with the English material. Sayer and Weinhold's study showed that graves tended to cluster into groups, and also allowed them to identify graves isolated from main clusters, situated in seemingly deliberate liminal locations. A similar pattern can be seen at São Gens. Because of the greater distance between individual graves, Ripley's K-function analysis showed a significant clustering only at a larger search radius (20m) than the English examples; no clusters are identifiable at smaller radii. As the dimension of the system is relative to the scaling relationship between the mass of points used in the calculation, these clusters are computationally sound even if a greater distance measure is used. The analysis defines two main groups of 13 and 20 graves, and some outliers to the north (Fig. 5). Of these, the southern cluster of graves around the 'Pedra do Sino' is particularly tight, emphasising the prominence given to this landmark.

Perhaps significantly, this southern group includes four anthropomorphic graves closely arranged around the 'Pedra do Sino'. In his pioneering study, Alberto del Castillo suggested that the typology of rock-cut graves may relate to chronological factors, with non-anthropomorphic graves representing an earlier (7th to 9th century) stratum, and anthropomorphic, or 'Olerdolan' graves, a later 9th- and 10th-century development.[44] More recent studies have critiqued this chrono-typological framework, emphasising the overlapping chronologies of the two grave forms.[45] If indeed grave type was therefore a choice, the preference for one over another may alternatively be a strategy by which distinction was expressed. Given the preferential location of these graves close to the pre-eminent landmark in the cemetery, it might be inferred that exceptional status was one of them.

This conclusion, however, poses another problem, namely that a further two (possibly four) anthropomorphic graves are located in what might be regarded as liminal locations away from, and in some cases between, the main concentrations of burial. In Sayer and Weinhold's analysis, such boundary burials were argued to have been placed in these locations deliberately, and a similar conclusion might be suggested at São Gens. If the placement of burials reflected different social identities, might a liminal positon identify

individuals who were not part of nuclear kin groups, and for whom individual social *personae*—as expressed in the anthropomorphic form—took on greater importance?

The form of the architectural space of cemeteries can be further analysed through visibility graph analysis (VGA) using *depthmap*. VGA calculates areas of equal visual area and their relationship to each other along the fewest and longest lines in space ('axial lines') – the idea being that 'all possible occupiable locations within the built environment [can] be categorised by their visual relationships to other occupiable spaces through a continuous map'.[46] The method therefore emphasises movement and visibility as a way of understanding the human uses of space.

In the case of São Gens, VGA allows us to interrogate the spaces created by the terrain and granite boulders in order to gain a better understanding of the placement of graves across the site. The produced visibility graph shows two zones of well integrated space running north/south across the necropolis through a line of large boulders; the more easterly zone forming a corridor of movement aligned on the 'Pedra do Sino', and therefore the most likely approach route into the cemetery (Fig. 6). Intriguingly, a child grave is located in the most prominent position on this corridor on the line of the boulders. Significantly, the central cluster of graves identified in the kernel density map shows little differentiation in terms of its visual integration: spatially these are similarly ranked to more isolated burials on the fringes of the cemetery. By contrast the southern group demonstrates great spatial isolation. Here, the cluster of burials is confined to a more-or-less enclosed area with poor integration to other parts of the necropolis. Given that in Early Anglo-Saxon cemeteries highest status burial are invariably correlated with most restricted architectural spaces, it can be supposed that the southern group represented some form of apex group.

[Level 1 header] DISCUSSION

Taken together the archaeological evidence from the cemetery and occupation site strongly support the idea that São Gens represents a community occupying the Mondego valley in the 10th century AD. Three broad observations can be made linking the cemetery and habitation site: the absence of any material remains outside the walled settlement in the area of the necropolis; the apparent complementarity of the settlement and funerary areas;

and a reconstructed community profile from the cemetery that matches that of the habitation area.

The stratigraphic sequence and dating of the habitation site appears to indicate a short-lived occupation culminating in the destruction level, radiocarbon dated to the second half of the 10th century.[47] This impression is reinforced by what is known of *choupana* huts from ethnography. *Choupanas* needed to be maintained on an annual basis by placing a new layer of broom (*Genista florida, Cystisus*) over the hut. If kept properly the hut could be used for up to 3–4 generations.[48] This timescale matches the evidence from the excavations, from which we estimate that the São Gens settlement was inhabited perhaps for a maximum period of 100 years. Indeed, this pattern of relatively short occupation is also documented in other early medieval settlements in this region of Portugal.[49]

This estimation is coherent with the interpretation of the cemetery. The ratio of child to adult graves, in particular, strongly supports the idea that the necropolis was that of a living community rather than the cemetery of a specialised segment of society or a central burial site for a number of communities spread over the region. Spatial analysis of the layout of the cemetery suggests that the site was used by a community comprising 3–4 self-identifying groups, over a period of around 4 generations – a finding that accords with the evidence from the settlement site.

Although fortifications around the settlement might suggest an elite presence, it is impossible from the archaeological evidence to identify social differentiation within the settlement. The archaeological and ecological record appears to reflect the day-to-day life of a rural community specialising in hunting and animal processing. The documented economic activities attest to the stability of occupation and the hut structures are coherent with a domestic use of the settlement. There is no evidence for social or economic differentiation between any of the hut remains. It is possible that any prestige goods that might have signalled social differences were perishable (e.g. textiles, wooden or bone/antler objects) and have therefore not survived. However, it is the case that privileged areas are absent from the settlement's layout, and all the huts strongly suggest an organization based on the household. In summary, all evidence points to the conclusion that this is a community composed of several families committed to the construction, maintenance and management of a common space: a walled settlement with a guarded entrance (wooden structures on top of granitic tors).

By way of contrast, one of the clusters of burials may represent an apex group. The southern group is also distinctive for several anthropomorphic burials, and three child

graves, perhaps reflecting the greater importance of individualism amongst this group. The inclusion of child burials in this cluster may correspondingly reflect their role as markers of family status.[50] In Early Anglo-Saxon England, the form and nature of the assemblage of graves can in particular be related to life course, age and gender constructs, and less so wealth or social rank.[51] This would suggest that the main differences in the treatment of the burials relates to family-level structures and local political power.[52] The size and composition of the São Gens community suggests that similar concerns may have influenced the location and form that rock-graves took. The general lack of spatial differentiation may suggest these are the graves of relatively equally ranked members of the community; however, there are clear core groups and outsiders, that might plausibly be interpreted as extended kin.

The archaeological evidence for burial remains are only one aspect of a long ritual process.[53] Digging rock-cut graves might be understood as ritualised activities in which bonds were renewed or created between the deceased family and extended kin, competitors, and neighbours, and which helped to embed these locales in memory and power. The visual and experiential permanence of these structures made them very much features of the landscape. During the sixth and seventh centuries Merovingian communities in Gaul seem to have strategically used visible burial practices at prehistoric and Roman sites in order to establish links with the past; a tendency recognised also in early Anglo-Saxon England.[54] The close spatial relationship between the necropolis and the Roman farm might be seen the same light. Guy Halsall interprets such burial display very much in the context of competition for local power; this is how one made a claim for local standing during socio-economic crises relating to the control over resources – particularly pastoral regimes.[55] A similar notion might apply at São Gens, although as the faunal assemblage was dominated by wild animals, it may have been hunting rights over surround uplands that were being laid claim to.

Palaeoenvironmental evidence provides further context for this interpretation. The Mondego valley runs parallel and northwest to a large mountain range rising to 1992m above sea level. Palynological research in highland lakes (Charco da Candeeira and Lagoa Comprida) in the mountains, has advanced a model of bioclimatic change from the end of the Pleistocene to the present day.[56] According to this model, there is evidence for increasing deforestation during the early Middle Ages, attesting to the systematic economic exploitation of the middle and upper sections of the mountains around AD 1000. Forest fires were used to clear upland for pasture and the smaller valleys for cereal production.

Archaeological evidence for settlements restricts itself to these same river and stream valleys, and indeed this is the case also with São Gens which is located on the right bank of the Mondego River in one of its most fertile sections.

Between the 5th and 11th centuries, political control over the region between the Douro and Mondego basins was very unstable. This was especially the case after the 8th century, when it became a frontier between Christian and Muslim states, with political dominance over the area oscillating from one state to the other. In political terms, this was a 'no man's land', and it is not possible to recognise central places or important sites before the middle of the 11th century. Only at this time was the frontier formally established along the line of the Mondego valley. However, the region remained absent from written sources until the 12th century, when it became part of a politically stable territory under the control of the recently formed kingdom of Portugal.

This climate of insecurity provides some context for the settlement and necropolis of São Gens. Given the uncertainty over overarching political control it is likely that local communities came to the fore in the management of resources and the maintenance of civil order. The enclosure and cemetery of São Gens both express these local peasant concerns. The use of a more-or-less permanent form of monumentalised burial and the association of graves with landscape features reinforce the idea that social relations and identity were closely linked with territories and resources. By occupying a defensible site, the settlers of the Mondego valley made literal these claims.

[Level 1 header] CONCLUSION

Within the broader region, the evidence from São Gens is somewhat unusual, but can be understood as part of similar processes recognised at other sites. In most cases, these also exhibit evidence for relatively fragmented political organisation based on kinship groups. Large cemeteries like São Gens are rare; most burial sites (around 93%) in the central region of Portugal consist of isolated graves of small groups of less than ten graves. At sites of 2–10 graves, their locations are not confined to a delimited area and have the appearance of being randomly scattered across a locale, with no apparent structuring logic.[57]

Amongst larger cemeteries, those with ordered graves make up only a very small percentage (2.5%) of all known sites in the Viseu region. The main characteristic of these cemeteries is the clustering of a high number of graves in a reduced space, usually cut side-

by-side and following a dominant orientation. The majority of such sites are in close association with a church, and it is highly probable that they developed alongside them. Indeed, in such cases, it is often difficult to determine the total number of rock-cut graves, as they can be partially or wholly built over by the church buildings. An important early example is São Pedro da Lourosa (Oliveira do Hospital); one of the few 10th-century churches known from the region. The association between ordered cemeteries and churches allows us to date their proliferation to the second half of 12th century, with most belonging to the following centuries. This was the time when parishes were being established across the region. In Portugal, the parochial system emerged first in towns before spreading slowly into rural areas. In the wake of the Gregorian reform, and the later implementation of tithe, parish churches began to be systematically built with their area of jurisdiction legally defined.[58] The ordering of graves at single locations reflect a similar concern to restrict and systematise burial.

Against this background, the large concentration of pre-12th-century burials at São Gens is particularly interesting. If, following Martín Viso's schemata, the form that rock-cut graves took can be related in some way to the social organization of the builders, then it should be inferred that there was something exceptional about this site. We have suggested that the community at São Gens may have been distinctive because it was predominantly engaged in hunting and animal processing. In this view, ostentatious burial may have been a symbolic way of laying claim to palpable resources across a territory and perhaps restricting rights to take animals. Red deer, in particular, are likely to have been hunted at the woodland edges of the middle and upper sections of the nearby mountains. Given the palaeoenvironmental evidence for the large scale reduction in tree cover in this area at the same time that São Gens was occupied, may hint that there was some competition over the control of these habitats. Perhaps significantly, the evidence from the enclosure suggests that this was not an elite community. Hunting in the medieval period is often seen as an expression of elite power, but here it seems that specialised peasant groups controlled these activities.

Despite the difficulties in analysing rock-cut cemeteries, we have attempted in this paper to describe an approach, combining spatial analysis and the excavation of a contemporary settlement site, that can be used as a way of addressing the lack of information about these monuments. Comparisons between the layout of the São Gens necropolis and early Anglo-Saxon cemeteries in England, despite their drawbacks, suggest that aspects of the social organisation of the burying community can be reconstructed from

this very partial evidence. Studies of the spatial arrangement of cemeteries, utilising methods such as those employed here, are vital to reach an understanding of the communities that buried their dead in these places.

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TABLES

Table 1 - Radiocarbon determinations for São Gens

Provenance	Lab Number	Type of Sample	Date BP	cal BC/AD	cal BC/AD

				(1 *sigma*)	(2 *sigma*)
Sector 10, SU9 (collapsed palisade)	Wk-25175	*Quercus sp. (cork)*	1161 ± 30	780-950	770-970
Sector 10, SU8 (hearth)	Wk-27455	*Quercus pyrenaica*	1136 ± 30	880-970	780-990

Table 2: Graves list from São Gens

Grave number	Typology	Orientation (head-foot)	Size (cm)			Observations
			Medium width	Length	Depth	
1	Not anthropomorphic	SE-NW	48	160	28	
2	Not anthropomorphic	N-S	50	172	35	
3	Anthropomorphic	NW-SE	44	173	40	
4	Anthropomorphic	NW-SE	44	177	29	
5	Anthropomorphic	NE-SW	50	188	27	
6	Anthropomorphic	SW-NE	53	180	31	
7	Anthropomorphic	N-S	39	153?	27	
8	Anthropomorphic	W-E	50	183	5	Unfinished grave
9	Not anthropomorphic	SW-NE	28	106	17	Child grave
10	Not anthropomorphic	N-S	54?	177	31	
11	Not anthropomorphic	W-E	51	196	34	
12	Not anthropomorphic	NW-SE	43	119	40	Child grave
13	Not anthropomorphic	SW-NE	43	125	4	Child grave
14	Anthropomorphic	SW-NE	44	172	30	
15	Not anthropomorphic	W-E	26	82?	15	Unfinished child grave
16	Anthropomorphic	W-E	47	174	15	Unfinished grave
17	Not anthropomorphic	SW-NE	52	188	35	
18	Not anthropomorphic	SW-NE	50	179	32	
19	Not anthropomorphic	SW-NE	51	182	36	
20	Anthropomorphic	NW-SE	50	194	28	
21	Anthropomorphic	NW-SE	50	191	27	
22	Anthropomorphic	SE-NW	55	186	30	
23	Anthropomorphic	S-N	52	191	27	
24	Not anthropomorphic	SW-NE	44	174	26	
25	Not anthropomorphic	NW-SE	49	178	33	
26	Not anthropomorphic	SW-NE	52	174	33	
27	Anthropomorphic	SW-NE	47	172	36	
28	Anthropomorphic	SW-NE	47	184	33	
29	Anthropomorphic	W-E	49	192	27	
30	Anthropomorphic	NW-SE	36	101	4	Unfinished child grave
31	Anthropomorphic	N-S	48	171	28	

32	Anthropomorphic	NW-SE	?	185	32	
33	Not anthropomorphic	S-N	48	179?	35	
34	Anthropomorphic	NW-SE	45	179	26	
35	Not anthropomorphic	NW-SE	53	190	15	Unfinished grave
36	Not anthropomorphic	N-S	44	158	29	
37	Anthropomorphic	NW-SE	50	194	29	
38	Not anthropomorphic	E-W	?	?	22	
39	Not anthropomorphic	W-E	48	185	25	
40	Not anthropomorphic	NW-SE	48	174	34	
41	Not anthropomorphic	SE-NW	34	64	15	Child grave
42	Not anthropomorphic	SW-NE	46	172?	35	
43	Barely anthropomorphic	N-S	50	181?	35	
44	Not anthropomorphic	NW-SE	44	181	39	
45	Barely anthropomorphic	SW-NE	44	179	33	
46	Not anthropomorphic	NW-SE	48	193	31	
47	Not anthropomorphic	SW-NE	49	197	38	
48	Not anthropomorphic	SE-NW	46	179	33	
49	Not anthropomorphic	SW-NE	48	179	29	
50	Anthropomorphic	SW-NE	47	173	27	
51	Anthropomorphic	W-E	50	194	32	
52	?	NW-SE	?	?	30	
53	Anthropomorphic	W-E	50	160	7	Unfinished grave
54	Not anthropomorphic	SW-NE	50	165	25	

FIGURE CAPTIONS

FIG 1

Map of Portugal with indication of S. Gens, Mondego and Douro rivers and the territory of Viseu (white square). *Drawing by Sara Prata*

FIG 2

São Gens: topographic plan of the archaeological site. *Drawing by Sara Prata*

FIG 3

One of the hut remains of São Gens and ethnographic parallel from Prime (Viseu's region, centre of Portugal) used during the 1950-60's. *Left: Photograph by Catarina Tente; Right: reproduced Oliveira, Galhano, Pereira 1969, p.107*

FIG 4

Rock-cut graves orientated on the 'Pedra do Sino' or 'Bell-Stone', with its distinctive erosional features. *Photograph by Catarina Tente*

FIG 5

Kernel density plan of the graves at 20m (left) showing the clustering of burials around the 'Pedra do Sino'. The plot at 30m (right) show the association of the central and southern groups, and the location of anthropomorphic graves. *Figure by Stuart Brookes*

FIG 6

VGA of the S Gens necropolis. Well integrated locations (in red) are shallow (in terms of number of steps) to all other locations; that is, involving the least turns to any other in the system. A poorly integrated location is deep with respect to the other locations and are coloured blue. *Figure by Stuart Brookes*

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[4] Martín Viso 2012a.

[5] Potter and Andrews 1994.

[6] Martín Viso forthcoming.

[7] Martín Viso 2012b; 2014; Tente, 2015.

[8] Marques 2011; Lobão *et al.* 2013.

[9] Project Number: HAR2010-21950-C03-02.

[10] Leal 1873.

[11] Oliveira, de 1939.

[12] Figueiredo 1953.

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[27] Hamerow 2010.

[28] Härke 1997, 127; Crawford 2007.

[29] Kuefler 1991.

[30] Düring and Wahl 2013.

[31] Mays 2007; Gilchrist 2012, 48.

[32] Mays 2007.

[33] Arnold 1988, 166.

[34] Crawford 1999, 104–5.

[35] Shepherd 1979, 47; Williams 2006, 158; Semple 2013, 13–62.

[36] Williams 2006.

[37] Carver 2001; Brookes 2007a; 2007b; Harrington and Welch 2014.

[38] e.g. Hirst 1985, 102; Kinsley 1993, 72.

[39] cf. for e.g. Evison 1987.

[40] Sayer and Wienhold 2013, 74.

[41] Hillier and Hanson 1984; Hillier 1996.

[42] cf. e.g. Foster 1989; Fairclough 1992; Gilchrist 1994; Cutting 2003.

[43] Sayer and Weinhold 2013.

[44] Castillo 1970.

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[48] Oliveira, Galhano, Pereira 1969, 110.

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[50] Hadley 2010, 107.

[51] Stoodley 1999.

[52] cf. Halsall 2013, 116.

[53] cf. e.g. Williams 2003.

[54] Halsall 2010, 243–60; Effros 2003, 175–218; Semple 2013, 13–62.

[55] Halsall 2013, 116.

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