

The Post Hole

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How I met the rock Gods Experimental Archaeology in Sardinia



**Archaeology and Text: Deciphering the myth
Nationalism, Archaeology and Yugoslavia
An interview with Charlotte Roberts
A reply to Preece: Hole-istic post-post-processualism?**

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A Message from the Editor

We have a great issue for you to close off the term. With articles from the University of Sheffield and York, and even as far afield as the Netherlands!

I would like to send out a special thank you from all The Post Hole team to Glenn Hustler of Enkayd Heritage Media (<http://www.enkyadheritagemedia.co.uk>), for designing our great front cover for this issue.

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1 How I Met The Rock Gods

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If there is one thing you have to know about Sardinians it is that they are so laid back they are practically horizontal. That was the pervading theme of my first archaeological expedition, a week doing experimental work in Serri, Santa Vittoria. A gap year student with no prior experience other than my archaeology A-Level and a summer building Iron Age round houses at Butser Ancient Farm, I was nervous enough flying on my own! One hour after my arrival, and I was still in the airport, without phone signal and any knowledge of the Italian language beyond, 'Is this vegetarian?' (it was the phrase I had found most useful in Rome). Soon enough, the rest of the party arrived, two Italians, two Sardinians and four Romanians. Their English put mine to shame. 'Aha, you must be Julie!' shouts one. Er... no, not quite...

They bundled me into a four-by-four and off we went, driving like maniacs in a country where there are so few cars that when two pass each other they stop and say hello. A few hours down the line and I was led down a tiny path to a beautiful little guest house. 'Just dump your stuff. We'll be back in two minutes.' Two hours later, they returned. I wondered at first if that was a mistake on their part, but I soon realised that was just the Sardinian way. Dinner that night took over three hours. With a wonderful disregard for anything resembling health and safety they took us to an excavation at one in the morning.



Figure 1. Pottery produced from kiln (Photo credit: Author).

And so to the archaeology itself. After a morning of doing, well, nothing, we finally got down to purpose. Experimental ceramics. My team, a group of local volunteers, and a group of orphans and nuns from the local town got cracking on a series of coiled pots made out of the local clay. A bit like the ones you used to make at school, shove a load of potpourri in and then give to your mum as a Christmas present. Starting with a round base, you build up the sides of the pot with sausages (a technical term, I believe) of clay. We only used traditional implements like wooden sticks and slabs to shape our pots. Possibly why mine looked a lot like a banana.

The second technique I learnt was slab building. Here, you create a sort of net from clay, and build it up into a shape, although this technique only really works with squares. The sides are stuck together with a little 'glue' - a clay and water mixture which is daubed onto a series diagonal strokes made on the sides of the slab with a wooden stick. As I grew, well, at least reasonably competent, we expanded our range from pots to a more eclectic selection of unidentifiable quadrupeds and mini versions of our countries' most famous archaeology. I did a fine roundhouse, complete with thatched roof, although I was reliably informed that Sardinians do not agree with my favourite t-shirt's slogan that 'Stone Henge Rocks.' 'Stone Henge...' quoth my group leader, 'does not rock. Sardinia's dolmens, now they rock!' The dolmens in question reached to my knee and, while abundant, did not match Stone Henge's grandeur in any way, I am patriotically happy to say.

Meanwhile one of our team was constructing traditional Sardinian 'Rock Gods' to grace the wall of our site enclosure. Rather than being carved out of rock, it was a basic arched structure of chicken wire with canvas stretched over it. This was then daubed with a mixture of gravel, clays and traditional dyes like iron oxide to simulate a craggy look. Facial features were created out of rolled up canvas and stapled on. When they were finished, stretching out over the landscape, they looked pretty impressive.

Eventually we had created enough ceramics and, after waiting the allotted time of most of the day, construction began on our kiln. Mud bricks arranged in a traditional up-draft arrangement and daubed with a fragrant mixture of mud, water and straw. A small chamber was constructed out of old pot sherds and the pottery was placed inside. A small hole in the side of the kiln wall allowed us to stick a thermometer in and check the temperature after we lit the fire at the front. And then the waiting game began. The kiln had to be lit for around twenty-four hours to bake the clay. Luckily, I got the day shift, although this did mean several long and tedious hours of poking bits of straw into the fire.

As a bit of a tourist hotspot, several curious folk turned up to ask about our work. Thankfully the age old Time-Team question hasn't reached Sardinian shores yet, but we began to get a bit bored of repeating the same answers ad infinitum. 'Let's pretend we're all English, and don't understand Sardinian,' suggested one of my team. I hardly need point out this required no acting work on my part. Securely equipped with a load of random English words, my team and I faced down the inquisitors with phrases ranging from, 'car-park,' to, yes, 'my hover-craft is full of eels.'

We took a day out to let the kiln cool and take in the local sights. Firstly a museum of local obelisks, ranging from the plain to the bizarrely carved, with frankly odd faces. Debate still rages as to what exactly they represent, with two

main factors disagreeing on whether or not they are males or females. Second on our journey was the red castle, a massive stone structure covered in bright red lichens. With no cement holding the stones together, the building was rather precariously held together with wood splints and rubber bands. It came with a collection of Iron Age round houses and storage rooms, although they were really more touristy than accurate. I am not quite sure what our third stop was as unfortunately I collapsed at that point, and had to be driven back to the guest house, whether this was because of the extraordinary heat or the glasses of vino I had consumed at lunch I am still not entirely sure.

We got back to the site the next day to find the kiln had already been opened without us. Half of our ceramics had gone. A local museum had come in early and taken some of them for display. 'And the orphans,' informed the site manager. Great, orphans stole my round house. The remaining pottery was divvied up between us. 'Wait we haven't done the procession yet!' cried our camera-man.

Did I not mention the camera-man? The entire week we had been followed around by our own personal crew of camera men, mic operators, sound guys, you name it. Archaeology is big in Sardinia, so big it gets taught in primary schools and we were to be the stars of some sort of educational video. Probably on the merits of waiting around for hours on end. I had also been interviewed about why I thought Sardinia was such a great country, which was apparently taken for usage by the Sardinian tourist board, although thankfully I have never found the footage. Our procession was the final piece for the video. After debating for five minutes over whether or not I counted as a virginal maid or a woman (turned out it was the latter), I was draped in the appropriate type of white cloth, handed a pot with a candle in it and told to walk up the side of a small mountain so I could lay my offering at the feet of the rock gods. Apparently it was a traditional ceremony which meant that while they graciously allowed me to keep my flip-flops on, I had to take out my CND sign earrings. My glasses, which also caused glare on the camera, had to go. After about five takes of this, I was cheerfully asked to smile more and stumble less, a considerable task when you are holding a flame you cannot see an inch away from your face!

And so with this closing ceremony, and a good old fashioned Sardinian knees-up in the local restaurant, my first archaeological expedition came to a close. It was a highly enjoyable and informative experience; not only about archaeology, but also on Sardinian work ethics (did I mention there is a lot of waiting?). To any student of archaeology, gap year or otherwise, I could not recommend this country enough. It has got a wonderful history, dedicated scholars and you will never find people more willing to pump you full of blackcurrant liquor and argue about rock art.



Figure 3. Author standing next to pottery kiln (Photo credit: Author).

2 Archaeology and Text: Deciphering The Myth

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Archaeology remains subservient to, and parasitic upon, history (Moreland 2003, 103)

After being an archaeology student for two years now, I can quite safely say I have learnt three things: Firstly, you must NEVER like theory, or admit to even understanding it until you reach MA level at the very least. Secondly, all prehistoric archaeology students see themselves as the true archaeologists as everyone else cheats with text. Lastly, and most severe of all, archaeologists cannot abide historians. So this made me wonder, where does this leave me, historical archaeologist and worse of all, buildings enthusiast? After wading through a sea of theory, searching Hodder, Johnson, Trigger and other infamous names from the second term of first year I have reached a startling conclusion. . .

There is such a thing as historical archaeology; it is not a myth, yes it is different from history, and no, we do not cheat.

The opening quote by Moreland startled me into writing this article. After assuming that Moreland defended historical archaeology, ridding the academic world of an unnecessary prejudice against archaeological studies of the historic past, I found this quote somewhat hypocritical. If Moreland is saying historical archaeology is valid, why say that it is subservient to history? In my time at York, I have certainly not seen the historical archaeology lecturers being dominated by the historians. I for one cannot imagine Aleks McClain, Kate Giles, or Steve Roskams being dominated academically by the lecturers from the history department. This then, surely suggests that historical and archaeological evidence goes equally hand-in-hand; neither can be simply ignored, nor can one dominate the other, and inter-disciplinary sources are vital to gain a true understanding of the historical past. First, to understand the long assumed relationship between history and archaeology, we must return to Hawkes ladder of influence;

Religion and ideology	Elites	History
Social relations/ Politics	Elites	History
Subsistence	"peasants"	Archaeology
Technology	"peasants"	Archaeology

(Moreland 2003, 14)

The view at this time was that archaeology could only inform scholars about basic production and consumption activities. The more complex forms of research such as societies 'super structure' was out of reach, and only accessible to historians (Binford 1972, 94). This view is apparently widely accepted by archaeological historians according to Moreland, and this Hawkesian style relationship is apparently transferable to real life (2003, 13). It is certainly true that

in the past, history has indeed hindered the progress of historical archaeology. But do archaeologists today need to enforce this ladder of influence? Surely this way of thinking is now long out of date? It may indeed be true that the textual evidence from early medieval periods (in this article, early medieval is that from 500AD – 1000AD) is scarce, but the knowledge that is lacking from text can be filled by the archaeology. Archaeology of the historic past can yield information that textual documents can overlook (Renfrew and Bahn 2008, 140). Not just because the poorer members of society were not worth recording, but because some aspects of life, rich or poor, did not seem important to the textual record.

The idea that archaeology could never substantially address 'many of the fundamental questions about the past', for example, law, politics or hierarchy (Lloyd 1986, 42) is easily disproved by many case studies from excavations and archaeological survey. For example, landscape surveys of prehistoric Wessex can reveal the social organisation of the use of the landscape, and thus provide new theories of how society was organised. Parker Pearson asserts that the landscape, through archaeological analysis, can be clearly divided into the domain of the living (near Durrington Walls), the domain of the dead (the area to the west of Stonehenge following the Cursus monument), and the area in between (marked by Stonehenge) (Renfrew and Bahn 2008, 205). This interpretation obviously displays a need for a social hierarchy, social organisation and man power. The estimated work hours to construct Stonehenge, according to Renfrew and Bahn are approximately 30,000,000 hours (ibid). This archaeological study shows that text is not always needed to study the elite, and the social structure and relations of a society. Renfrew and Bahn also correctly state that the lines between history, archaeology and prehistory should not be too sharp (2003, 139). They put forward an interesting argument, which asserts that differences between writing and communication is not always clear. Text is one of many forms of communication, others being pictures, numbers and symbols (ibid). Early prehistoric humans perhaps used rock art as a form of communication. Even though their precise meaning cannot be ascertained, who are we to discard this valid and important form of communication, as archaeologists regularly discard text? It is perhaps time that historians and prehistorians breached this fine line and shared evaluative and research tools, thus broadening our understanding of the historic and prehistoric past.



Figure 1. Rock Art- A Form of Communication that should be dismissed as text often is?(Photo credit: Trustram Eve, 2009).

Another example of the usefulness of archaeology in studying the past comes from the study of early medieval towns. There have been a number of theories explaining the need for towns in the period during, and after that known commonly as the dark ages. Urbanism has been defined and studied by not only archaeologists and historians – the sociology and geography (location choice, communication and models of centrality) has also been looked at. Historians displayed interest in urbanism from the 1880's onwards, inspired by the rise of modern cities, especially in America. There was however, a tendency to focus research on legal history. This was because law was seen as the foundation of a society, therefore non-documentary evidence was considered irrelevant. As the history of urbanism moved into the 20th century, the focus changed to defining urbanism as social formation. Even though this was certainly a step forward, this method of research still focused on the elite, and assumes that it is those who control. Rollason's (1998) compilations of written evidence from early medieval York, although an invaluable resource, hint only at the roles of the elite. The texts suggest that these wics were set up by the elite. For example, a letter from Pope Gregory the Great to Augustine (Rollason 1998, 46), although interesting in establishing when the town was officially a town, does not tell us if it was an urban centre at the time the letter was written; trade and displacement could still have taken place. No research was undertaken into the 'peasants' of a town, as they were not considered to be of use – it was the elite who made and shaped to town. The arrival of archaeology though, has changed this considerably. The contributions that archaeology has made to the study of early medieval towns cannot be listed in one sentence, or even in one paper. Our knowledge on the function of these towns or emporia have improved significantly- these settlements were used as bases for the displacement of goods, through local trade and the wider world, be it the elite giving gifts to secure political ties, or trade to get goods not available in that particular

area. Any archaeology student from York for instance, will be familiar with Coppergate and more recently Hungate. The break-through first came in the 1960's when Biddle excavated Winchester, and focused on establishing a dated sequence of events of the urban development of the town. This was comparable to the political history that had been researched already. This groundbreaking research paved the way for early medieval archaeology today, and has shaped and changed our understanding of this period, providing us with more knowledge than we could ever hope to gain from textual evidence alone.

Another form of settlement that can be used as an example is that of the deserted medieval village. Up until recently, it has remained a romanticised and over simplified part of history, due to the reliance on the historical record. Defined by Beresford as a community that once existed, but now only has at most, a manor, farm or church (1987, 21), deserted medieval villages, for most people, portray the image of a sudden abandonment due to something unexpected, most commonly the Black Death. This is what tax records from the time have led us to believe. In Leicestershire for instance, of 62 deserted villages, 37 have poll-tax records surviving (Beresford and Hurst 1971, 8) which tell us about the apparent 'sudden desertions' of these settlements. The hamlet of Armstalls (Oxfordshire), formally Hamstall for instance, was taxed with the nearby village of South Leigh. In 1389, it had three tenants; in 1467 only one remained. The period is only 78 years, but the village has significantly decreased in size (Allison et al 1965, 42). Beresford correctly argues that the Black Death did not cause the desertion of villages as historians so often like to suggest, and goes on to say that historians tend to find a 'catastrophe' (1987, 159). This is true, that people in general say that the Black Death caused the desertion of villages, when there is evidence to the contrary; for example, people may have moved due to crop failure, poor soil, or continuous bad weather (Beresford 1987, 139). This evidence can be obtained through archaeological excavation and research; for example, environmental archaeology can determine how crops were doing in examples taken from various contexts. This can be aided by historical evidence, as there are often records of continuous bad weather or significant events which can cause people to desert a settlement. This requires historians and archaeologists to work hand in hand, and not criticise the other's methods. Some articles on deserted medieval settlements such as Beere (Jope and Threlfall, 1958) however, admirably use both historical and archaeological records accurately and fully, thus gaining a fuller picture of the history of the site. Why then, can't all historians and archaeologists do this, and overcome their prejudices about a valid form of research (historical archaeology) that has provided answers to many unsolved problems?

Historical archaeology then, is not, 'subservient to, and parasitic upon, history' (Moreland 2003, 103). Archaeology is a research subject in its own right. The evidence collected by countless amounts of excavations has undoubtedly proved that archaeology has contributed hugely to our understanding of the past. However, it is important to strike a balance; archaeology should not be subservient and parasitic (ibid) upon history, but neither should it distance itself completely. There needs to be an ideal balance between the two, where information is shared and compared in order to gain a better idea the past. Although it is arguable that the debate of the usefulness of archaeology and text is deceased, doubts of the credibility of historical archaeologists are still ever present in certain circles of history and archaeology. It is important, as Moreland

correctly identifies, that scholars in both the history and archaeology fields need to realise that people in the past had a rich material culture as well as textual one (2003, 119). Those scholars who see text as factual are severely limited in the evidence they can produce. Archaeology must now be taken seriously from a historical perspective – it has gone above and beyond proving its worth as an academic subject, and has provided invaluable evidence in numerous research projects of numerous periods in the historical period. Historical archaeology is finally, and deservedly, being treated as a valid research subject and as a branch of archaeology in its own right. Better late than never. . .

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3 Nationalism, Archaeology, and Yugoslavia

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Archaeological theory deals with the way in which material culture is interpreted: interpretation allows the archaeologist to make inferences on past societies from simple objects which otherwise would be nothing else than mute finds. As a consequence, the study of past civilisations depends on archaeologists' methods and approaches to material culture.

Pure theory, however, is not the only affecting element; politics has always played a significant role in the practice of archaeology, in particular when political weakness and social unrest have fuelled the growth of nationalist movements. A huge literature has been produced on archaeology and nationalism, and numerous case-studies from around the world point out the relevance of the historical past in the development of a people. The Balkans, namely those countries which once formed the Socialist Federal Republic of Yugoslavia, is a striking example.

There are many reasons why this area can best depict such a widespread and complex phenomenon. First of all, it represents a current situation in a European context. Secondly, it is characterised by complex and variegated forms of ethnic conflict, where archaeology plays (or is forced to play) a significant and often different role from one region to another. Thirdly, such a misuse of the historical and archaeological record is further biased by a misleading theoretical approach.

The ethnic composition of former Yugoslavia has often been cause of conflict and political weakness since the Middle Ages. The ephemeral medieval kingdoms, often enhanced in modern nationalist historiography, were eventually replaced by the Ottoman and Habsburg Empires in the 15th and 17th centuries respectively and ruled until the end of World War I. After a short period of political instability, a unified political entity emerged in 1945 under the leadership of Josip Broz Tito, who implemented a form of socialist dictatorship independent from the Soviet Union (Jelavich 1983; Curta 2006). Ethnic conflict broke up again in 1990 mainly between Catholic Croats, Orthodox Serbs, Albanians and Muslim Bosnians, from the rise to nationalist feelings; the process of Yugoslavian disintegration is still in course, with Kosovo being the sixth to claim independence from the federation.

In modern times, nationalist feelings in the Balkans arose for the first time in the late 18th and 19th century against the Ottomans and the Austrians, when similar processes were occurring in other European regions. In parallel with these events, Balkan archaeology emerged and developed in this period as a political instrument in the hands of Slav patriots; in particular, medieval archaeology developed as a consequence of the medieval origins of ethnic rivalries (Kaiser 1995, 106-114).

The two periods of Yugoslav archaeology correspond to the two main political phases of the area. During the period in which the Serbs had a major role in united Yugoslavia (1945-1990), politics employed archaeology for supporting the idea of a pan-Slav reality. In the 1950s, many Early Slavonic sites were excavated in northern Slovenia, in the same place where archaeologists of the *Ahnenerbe* (the Nazi 'Ancestral Heritage Society') searched for evidence for long German occupation; this effort to contrast the abuse of history that justified German war

crimes, however, was inevitably approached with the same theoretical methodology. At the same time, another project on Slavonic settlements was being carried out in the Yugoslav-occupied Zone B of the Trieste Territory, disputed with Italy (Novakovic and Slapak 1996, 288). More recently, following the first Albanian ferments in 1981, there was a dramatic increase in excavations and surveys promoted by the Serbian Academy of Science and Art, which of course proved a long Serb occupation. The archaeological documents produced by this institution have been the intellectual justification for Slobodan Milosevic's genocide policies (Kaiser 1995, 114).



Figure 1. The 18th century Eltz Manor in Vukovar, a town in a Serb-majority area on the border with Serbia, is represented in the background: the palace was destroyed by the Yugoslav People's Army during 1991-1995 war; in the foreground, the Vucedol pottery, symbol of the major Copper Age culture of the area, was found on the site from which Vukovar itself was bombed. (Photo credit: Author).

After each republic became independent (the start of the second phase), archaeology was employed for the identification of ethnic-specific elements in the archaeological landscape; at the same time, however, ethnic groups started identifying themselves with non-Slav cultures and symbols, seeking elements which could radically distinguish them from the other Slavs including, for example, the adoption of a different alphabet. To this respect, two cases are particularly relevant. The first one deals again with Slovenia and its development since the mid-1980s of autochthonous theories on the origin of Slovenians, supposedly to be either Etruscan or Venetian (Novakovic and Slapak 1996, 289). The second example comes from the Republic of Macedonia: both the name and the flag of this new country caused a major dispute with Greece. Macedonia is indeed the name of an ancient civilisation and of three modern Greek regions, and the naming of the Republic after them was seen as an appropriation of present and past Greek cultural elements, or even as a possible claim of land. As for the flag, the sixteen-pointed star of Vergina, identifiable on many archaeological finds, was adopted, stressing the aspiration to identify with Alexander's Macedonia (Kohl 1998, 239).

All these misinterpretations of the archaeological record were made possible and enhanced by the theoretical methodology employed until recently in the

Balkans; namely, that one of culture-historical archaeology which well fits political purposes: in this approach, material culture (usually ceramic typologies and styles) is used to spot ethnic groups and, as a consequence, changes in these data are explained with migrations or invasions and thus with the advent of a new people. The result is the building of schematic chronologies which delimit 'impermeable' cultures in time and space, using ethnicity as an organising principle (Kaiser 1995, 104-108; Curta 2001, 370-375). Themes like ethnic and linguistic patterns and territorial issues were often approached by Yugoslav archaeologists; for example, Draga Garasamin (1972) concludes that "the Bronze Age evolves as a very important stage in the process of formation of the Paleobalkan peoples, their ethnogenesis, and the historical events that have left their imprint, in a sense on the historical evolution of the old Balkans" (Kolaric 1972, 42). Few isolated figures, such as the prehistorians France Stare and Stane Gabrovec and the medievalist Bogo Grafenauer tried and opposed this methodology, aligning themselves with the position of most archaeologists in Western Europe and America (Novakovic and Slapsak 1996, 289).

In Slovenia and Croatia, where the conflict has been less troublesome, there was space for a development of the discipline, and certain positions and approaches have been abandoned; manipulation of the cultural heritage, however, has not. One of the best instruments for the diffusion of state ideology is the symbolism expressed on coins and banknotes: many notes issued by countries all over the world have elements of their cultural heritage as the main topic. The reverse of the 20 kuna banknote, however, looks like an account of Croatian recent history, as well as an act of possession of the elements depicted (Kaiser 1995, 118). In Bosnia and Herzegovina, there is a similar reference to the historical landscape on the Bosnian version of the banknotes, where the typical and widespread *stecci* (medieval carved tombstones) are represented; in general, the role played by the cultural heritage in this country is still complex, as reflected by the current political and ethnic situation. The case of the multiethnic town of Pocitelj is emblematic: here the restoring of the historical centre, led by the University of York, had to face the attempts to misuse the archaeological excavations undertaken; Christian Croats prevented the reconstruction of a mosque destroyed because it was supposedly to be rebuilt on the site of a Christian church, and any data supporting the Christian origin of the settlement is cause for disputes and provocations (Barakat et al. 2001, 169-173). A more famous reconstruction is that one of the Stari Most (Old Bridge) in Mostar, which was bombed and destroyed for its symbolic value. Perhaps the most meaningful event was the 'discovery' of the pyramids of Visoko, near Sarajevo: here the amateur archaeologist Semir Osmanagic claimed the existence of an ancient great pyramid complex; the ambiguous and manipulated evidence supporting this discovery confirms the scepticism shown by academics, and the whole case seems to be an attempt to create a national monument for the Bosnians and to promote tourism (Hvaal 2009).

The case of Yugoslav ethnicisms represents a major issue in the practice of archaeology, namely in the way archaeologists should deal with politics and society. The search for a neutral approach seems an impossible task; archaeologists are humans and citizens of nation-states, and as such, they derive inferences about the past from their present condition. It remains the problem that even the most professional archaeological interpretation can be manipulated by politics or society, as the Pocitelj case demonstrates; furthermore, in some socio-political

contexts, when archaeology develops into a conscious, independent discipline, a loss of interest (and money) from the public and the State is sometimes noticed. As Novakovic and Slapsak (1996, 290) wrote, "archaeology can avoid nationalism, but nationalism cannot do without archaeology, and thus, despite any effort, archaeological work will always be political.

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4 What's In These Bones? The Bioarchaeology Of Me

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As a follow up to Helen Mackie's self-completed osteological report (2010) in our last issue, I will attempt to assess what future archaeologists might conclude about me from the molecules in my bones and teeth using current techniques. Like Mackie's article (2010), this is not an outlet to feed some narcissistic tendencies I may harbor, but a brief discourse of lessons learned over my university career as well as a medium to air some ideas that have struck me during seminars and pub sessions with fellow archaeology students. I will talk about stable isotope analysis, as well as venture into possible DNA studies. But first, I must begin with an introduction of myself.

I hail from a tiny island in the middle of the South Pacific. I am very proud to have been born and raised on the island of Guam, an American territory since 1898. When I turned 18, I flew to England, which for the last two years, has been home. These two facts are very important for the first method I will discuss stable isotope analysis.

When assessing the diets and migrations of the past, bioarchaeologists often turn to stable isotopes to discern what types of food the individuals were consuming. In addition to this data, information about movement from one area to another may be gleaned and interpreted. Frequently employed are the strontium, oxygen, nitrogen, and sulphur isotopes (Price et al. 2002; Richards et al. 2001). These isotopes are taken into the body via food and water consumption (Schroeder et al. 2009), and are incorporated into teeth and bone collagen matrices. This isotopic signature will remain in the bone collagen for around 5-10 years. Teeth give insight into a limited period of an individual's life, as teeth are formed in youth and are not subject to mineral turnovers like bone and are less likely to experience post-mortem contamination. Therefore, when studying teeth, bioarchaeologists are wary to note that they are examining the individual's childhood and perhaps young adulthood.

Oxygen and strontium mainly divulge information about an individual's movement (Schroeder et al. 2009). Strontium is present in the underlying geology of a region, taken up into the soil from the bedrock and transferred into plants and groundwater. As geologies vary from region to region, strontium signals also vary according to the age of the bedrock (Bentley, 2006). Oxygen, on the other hand, is varied because of the differences in precipitation (a complicated system of preferential uptake of lighter oxygen molecules into the atmosphere and distance from the sea (Gat 1996)). However, it is important to note that while individuals in a population can be singled out as interlopers, their place of origin is difficult to pinpoint due to the widely separate but geologically similar geographical areas (Schroeder et al. 2009).

Nitrogen and carbon enter the body through food. Nitrogen measures the trophic level of ingested food, thus leading to knowledge of terrestrial and marine food chains (Schroeder et al. 2009). Carbon isotopes also map this difference in resource-exploitation, but also enable studies of what type of plants were consumed via the identification of two types of carbon pathways (C3 and C4). Sulphur, according to Richards et al. 2001, can be used to measure both diet-resource origin and migratory patterns.

Now, this is all well and good in a past where food resources were assumed to not be as globally transmitted as they are today. Using human hair, studies on modern diets and the stable isotopes captured in the keratin have produced very interesting results (Chesson et al. 2008 and Ehleringer et al. 2008), but what does this out-sourcing of food mean for future archaeologists trying to discover my dietary intake?

Majority of the food on Guam is imported: quite a lot of the beef is from Australia, the jasmine rice that was staple to my childhood diet was usually from Thailand, and the corn, the only “vegetable” my father could bribe me to eat, was canned somewhere in the mid-western United States. In terms of identifying my dietary intake as a child, I am quite confident in saying that future bioarchaeologists can examine the mass-spectrometry results and conclude that I ate an exorbitant amount of terrestrial-based meat and plants with a slight indication of the maize I consumed. However, if I die and am buried in England, would they be able to tell I was an expatriate?

I would hope so, but in addition to the imported food from geologically varied regions, bottled water is also imported. In an attempt to not discuss the problems plaguing Guam’s waterworks infrastructure, I will hope the reader finds it suffice when I say that the tap water in Guam is not always a reliable drinking source. Therefore, dependent on what kind of water my parents chose from the supermarket, as well as the later introduction of UV purification systems (which has been demonstrated to alter the oxygen isotopic levels in favor of the lighter molecule; Courbon et al. 1977), this seemingly straightforward analysis may just make the picture even blurrier. Perhaps sulphur would be the best isotope to identify my migration, as Guam in 2003 experienced waves of sulphuric ash coming from Mt. Anatahan, an active volcano on an island 320 km north of Guam. Surely this increased exposure would be recorded in my wisdom teeth, as they do not stop growing until somewhere in my early twenties (Scheid 2007), and place me as an outlier in an English cemetery sample.

Sampling of my postcranial bones might begin to hint at a change in diet and location, through evolution of food preferences and tap water intake, but if we were to assume for the sake of this article that I died tomorrow and was buried within the week, the last two years of my British-based consumption may not leave a noticeable signal in my bones.

Yet, perhaps my future investigators may find that a conclusion about my biomolecular history would be best served with DNA analysis. In archaeological sampling, mitochondrial DNA (mtDNA) is preferred, simply because of the number of copies that exist equate to the increased likelihood of DNA survival in a deposited bone. This set of DNA is actually useful for population studies as it can possibly relate individuals in a population to each other through maternal lineages (Salas et al. 2005). However, this is the limitation with the use of mtDNA: the history told follows one line of women, and ignores all other contributors to the person’s genetic inheritance. This said, modern Y-chromosomes are beginning to be further explored (Hnemeier et al. 2007) and in the future we may begin see a paternal counterpart in investigations of the past. However, this is severely limited by the survival rate of nuclear DNA in ancient bone samples. It is worth mentioning that techniques are increasingly becoming more reliable and effective, and the analysis of Neanderthal nuclear genome was recently published (Green et al. 2010).

Unfortunately I do not carry a Y-chromosome, thus am a female and therefore would not provide such interesting information about my father's legacy. Despite this, I am sure that analysis of both sets of DNA might shed some interesting light on my life history. My mother's family is originally from the Philippines, and despite her mother's mixed heritage (a true mestiza), her mitochondrial DNA is most likely to be grouped with other similar mitochondrial genomes from Southeast Asia. However, my father is of Caucasian descent, his ancestors migrating to the United States from various countries in Europe. As such, I would expect my nuclear DNA to carry markers from both populations, with the Spanish admixture adding even more confusion. While my Southeast Asian mtDNA might indicate that I am a migrant, in these times of easy mass-migrations of people from one corner of the globe to another it may not be surprising. If anything, I could be falsely identified as sharing close relations to those other carriers of Southeast Asian mitochondrial DNA and we would be grouped together as a single unit of migrants, when truthfully I come from an entirely different socio-political background.

To conclude, this self-analysis of the molecules that form my physical self is interesting in that it provides a different perspective to how remains should be treated and interpreted, as well as an awareness of the difficulty our future successors will encounter when trying to analyse the diets and migrations of a globally connected and technological advanced society. I am guilty, at times, of treating skeletons as "specimens" and examining them through cold lenses, when really those bones and whatever information they offer were once living, breathing people, made of flesh and blood, with complex life stories that we can only begin to imagine and piece together incompletely. For the future archaeologists, who for one reason or another, decide that our time is one of interesting study and expose my bones from the grave, I only wish them luck in their attempts to understand my life through my diet and genetic composition as it is sure to be rife with lots of confusing details.

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5 Histology: An Overview

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As a Dutch student attending the European Meeting of the Palaeopathology Association in August 2010, I was very lucky to present a paper on histology in palaeopathology. I was even more pleased when Christina Cartaciano invited me to write a short article on histology, for a journal on the other side of the world.

Unfortunately, it seems that histology is still a mysterious and somewhat misunderstood technique in archaeology. As a medical student, I would like to present a short overview of histology and the knowledge and techniques of which may find use in archaeology. I know it is impossible to be complete, so I apologise beforehand for the shortcomings of this overview. I will try to provide a ‘quick and dirty’ summary on the methods used and the data that can be derived. However, to start with the conclusion: histology is not by definition a difficult, time-taking technique. Nor does it need expensive machinery or years of experience. Histology is accessible to everyone.

Nonetheless, a basic knowledge on the histology of bone is essential for any potential histologist. Bone is a complex and beautiful tissue; it has the ability to be strong and supportive, whilst being dynamic and versatile in a manner that can hardly be imagined.

In general, bone tissue can be classified in many ways, from the way it is formed (membranous or cartilaginous) or its appearance (being trabecular or compact). Any good histology book or orthopedic handbook can provide the information needed on this. In several great reviews by Frost (for example, 1985) bone is described as a dynamic tissue, continuously adapting to the demands it must meet. These demands can be physiological (increased muscle strength or growth) or pathological (tumors and fractures). There are three ways that bone adapts to the ever changing environment: by resorption, apposition and remodeling (Vigorita 1999). Since all these processes act on the microscopic level, light microscopy becomes an apt instrument for bone investigation.

Discovering light microscopy’s suitability for bone investigation resulted in the development of many histological techniques in palaeopathology. But before we plunge into these techniques, we need to address the production of suitable sections for light microscopy. A few decades ago, decalcification was seen as the best way to produce sections; however, this is now considered obsolete. Archaeological bone consists almost entirely of minerals and if decalcified, little would be left to investigate. Also, in spite of its extensive deployment in previous histology research, the use of a microtome (a sort of knife to cut slices of tissue) is similarly considered obsolete (Wallin 1985). When applied to archaeological bone, the microtome causes the sections to shatter and/or break.

Since the above mentioned methods are now more or less useless for archaeological bone, histologists tried an old technique derived originally from metallurgy: grinding. Again, Frost was an important pioneer in this line of work (1958). In the last decade, many researchers have developed their own variety of grinding techniques. Some use automated grinding machines (An and Martin 2003). Yet a hand grinding technique is a good alternative. Since the majority of archaeological cases will be on a tight budget, a manual was produced to give directions as to how anyone can produce sections by means of some sandpaper

and water (Maat et al. 2001). This method has been tested and deemed fit for cortical tissue (Beauchesne and Saunders 2006). If however the bone material is fragile, an embedding medium is needed for support. I will not bore you with the details on this, since medium choice is quite technical chemistry. Besides, impregnating bone can be a lengthy process and the media used is often costly. Many professional palaeohistologists use a grinding machine subsequent to embedding, making this less accessible to starters. We are currently working on a good manual for anyone interested in producing histological samples that provides a quick and cheap alternative.

Once a section is made, the information that can be derived from it depends strongly on the preservation. Since taphonomic changes due to microbes (Hackett 1981; Hedges et al. 1995) cause destruction of bone micro-architecture, it is essential for a good histologist to understand the degradation of the material he/she is working with. That said, there are many histological techniques available nowadays for suitable bone tissue.

First of all there is histomorphometry. This represents the more quantifiable part of histology. It focuses on the amount of certain aspects of bone tissue. The work on age prediction by histomorphometry is quite well-known in palaeopathological circles (Stout and Paine 1992). The use of polarizing filters is often used, this enhances fiber direction, making differentiation between bone types even better. In the review of Stout and Paine (1992), there is also an interesting paragraph on microradiography, a technique in which x-rays are made of the section, making degree of calcification visible.

In addition to histomorphometry, there are more subjective techniques of histology. These are mostly used for diagnostics (Garland 1989; Schultz 2001). For people interested in the combination of micro-CT and histology, an article by Kuhn (2006) in HOMO can be interesting. For people more interested in the differences between animal and human bone, I can recommend Cuijpers (2009). I could provide a myriad of other envisioning techniques or specialized research lines, but for now I believe this overview should get you started.

Since histology is by definition an invasive technique, many archeologists are cautious with the method. This is understandable. I hope, however, that by reading this overview, histology has become a little bit more understandable and accessible because really, 'the truth is in there'.

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6 A Reply to Preece – Hole-istic Post-Post-Processualism?

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Preece's (2010) broadside against the worryingly common indifference to theory in archaeology should be welcomed, and hopefully will provide an impetus to debate amongst us all. His argument, however, that post-processualism does not exist and has warped research agendas, should be held up to further criticism. In this brief article I shall attempt to draw out the strengths in Preece's discussion and perhaps achieve a more balanced view of the way forward, which is not, as Preece suggests, to go backwards. It is ironic that Preece's argument revolves around the deconstruction of the term post-processualism, a very post-modern concept. That, however, is not our main point of discussion.

Preece (2010) makes an admirable case for the non-existence of post-processualism as a coherent body of theory. In this he is probably quite correct. There are a wide range of theoretical standpoints in 'post-processual' archaeology, few of which are compatible with each other (e.g. Ray 1987, Tilley 1994, Edmonds 2004, Sanz et al 2008), and some of which actively deconstruct each others' work (e.g. Barrett and Ko 2009 on Tilley 1994). This gives a sense of the fundamentally disparate group of archaeologists which we are considering, whilst there is yet further debate between more traditional archaeologists and those they label 'post-processualists' (e.g. Fleming 2006, 2007 against Johnson 2006, 2007). This maelstrom of theory has led to some processual archaeologists bemoaning post-processualism's 'chameleon-like' nature, which change their form under criticism but maintain their essential characteristics (pers. comm. H Mytum January 2007). This is not, however, a function of 'post-processual' scholars' inherently slippery and sly nature, as the quote might suggest, but rather a natural outcome of the attempts by processualist scholars to squeeze the multiple and often contradictory theories of those disagreeing with them into the neat boxes and categories of which their 'systems thinking' (Renfrew 1994) is so fond.

I feel, however, that post-processualism as a term, if it means anything, is just as Preece suggests, an attempt to differentiate this very broad spectrum of work from processualist scholarship. Processualism has a very well-documented set of strengths and weaknesses, and this debate formed a major theoretical battleground in the 1980s (see Trigger 2006 for a gentle summary). The failure of processualism to account satisfactorily for socialised agency, actioned identity and regional complexity, amongst other issues, necessitated a push forward. This emphasises social and cultural variability, and analysis of the factors behind the processes active in such dynamics. As with many academic zeitgeists, in the heady early years of 'post-processualism' certain scholars threw the baby out with the bath water, and produced views just as unbalanced as those they criticised; indeed, some scholars still hold these extreme positions (Shanks and Tilley 1987, Tilley 1994, 2008, Bender et al 2007). The controversy created by such scholars has sadly over-shadowed the more balanced and subtle interpretative models used by other scholars, such as Gillings and Goodrick (1996), Edmonds and Seaborne (2001), Bradley (2005), Gillings et al (2008) and Goodchild and Witcher (2010). The theoretical hallmarks of this field include

attention to landscape context, holistic methods of study, multiple and dynamic identities, materiality, sensualism, reflexivity, and the use of GIS models as heuristic devices (Goodchild and Witcher 2010). Rather than making the vague spatial analyses rightly criticised by Preece (2010), these works employ multiple techniques of data-gathering and analysis in order to make detailed, reflexive and holistic interpretations of the past that are emphatically not processualist. Perhaps the closest term to describe the works of such scholars would be ‘holistic contextualism’, although I doubt many would agree, and this is the subject for another article.

Preece (2010) focuses particularly upon the impact of ‘post-processualist’ theories in Roman archaeology, and given his emphasis on the paradigm, and my own research interests in the field, I feel that his work needs grounding in a wider context. Roman archaeology is peculiar in British archaeology because it suffers particularly from the post-imperial biases, nostalgias, and guilt-complexes that form a major part of legacy of the British Empire to academia (Hingley 2000). This has ensured a far more laboured deconstruction of prior scholarship in the past twenty years than has occurred in other periods of British archaeology (e.g. Mattingly 1997, 2006, Webster 2001). This has of course meant a rather excessive focus on the concept of identity in certain quarters, at the expense of research into the economy and agricultural practice. The debate on urbanism remains very active, albeit couched in rather different terms to the ancient ‘consumer/producer city’ debate (e.g. Laurence 1994, Esmonde Cleary 2005, Willis 2007, Rogers 2008). These studies have in common a concern with rigorous data gathering, particularly excavation and geoarchaeological survey, and attempts to integrate the social with the functional, and question the culture/nature dichotomy. Although space runs short here, I believe that these will be some of the most fundamental concerns of Roman archaeology over the coming years as it moves forward, rather than a move backwards to the rigid and desolate systems of processualism.

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7 A Review Of The Yorkshire Museum

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Figure 1. View of the inside of the museum (Photo credit: Author).

As a child I spent a lot of time trawling museums with my parents, being fascinated with everything they contained and often getting annoyed at my siblings disappreciation of them. Yet years later as a third year bioarchaeology undergraduate student I feel my view has become more critical of these places. In this paper I hope to review the newly refurbished Yorkshire Museum through the eyes of that little girl, and give my honest opinion as to the value of this museum as a means of education as well as entertainment. Reopened on the 1st August 2010 after a £2 million refurbishment, the Yorkshire Museum already has at its advantage a beautiful building set in lovely surroundings, plus its location in the centre of York makes it an important tourist attraction. Costing £7 for an adult and free for a child, it is unlikely to not be on the list of places to visit in York. But what does it offer the visitor in terms of educational content and entertainment for all ages?

The most documented periods in York's history via both documents and archaeological excavations are Medieval and Roman. It is indeed true that if you knew little of York's past you would not be in doubt of this fact after visiting the museum. That is to say there are still some elements of prehistory and even a room dedicated to dinosaurs. In this way although to me the focus on Medieval and Roman York is not favourable it is somewhat inevitable due to the amount of recoverable artefacts from these periods and the familiarity

with them even outside York. All displays are reasonably well labelled, but for the archaeology enthusiast who wishes to read plenty of signs giving detail they may be somewhat disappointed. There are areas in which the labelling and documenting alongside the artefacts is achieved well, for example in the first room there are some small cabinets to the outer edges, which instead of just listing what the artefacts are and where they were found, put the artefacts themselves into a sort of context. This type of information is somewhat aimed more at adults and its presence is important, yet at some points displays lacked any real grouping or did not have labels for individual items at all. Although now having been open for approximately three months, it is still possible that there was not time for aspects such as these before the agreed opening day and we may see remedies to some of these in the future. Something I feel would have aided the educational element of the museum is guides or people in the different rooms giving information. Although this is a personal preference and sometimes people do not wish to listen to such informers, I feel that the choice should have been made available.

As well as representing a fun day out for the family, the Yorkshire Museum seems to cater for a more professional group, thus proving its knowledge and input into the research it actively displays. For example, a rather sophisticated reading room is located on the floor named the 'Learning Level' and a library open upon appointment. Another important factor is the last element of the museum, assuming everyone takes the basic route I did, a corridor concerned with endangered species today and what the future of our ecosystems are. Many cynics as to the importance of history and archaeology today may highlight its influence as solely the past, that it has no real meaning today, yet this display helps show its importance to the general public and allows them to become grounded in the present after going through a potentially fairytale style journey of the past around the museum. What information is contained within the four walls of the Yorkshire Museum is also made interactive to all. For example, there are maps of York with movable points, interactive screens, boxes with specimens contained and more entertainment based ideas, such as children's play areas and scales to see how much you weigh compared to different dinosaurs. Much of this although a novelty and unlikely to bring back visitors time after time does help make the tourist's visit one of both education and fun.

Whether people agree or not museums are meant to be entertaining places. The purpose of them is to open the world of history and archaeology to the general public. They are similar to documentaries in that they are a media by which people can feel they are part of their own past and part of the research that is unearthing such interesting and debatable 'facts'. They are meant to be accessible to everyone. I feel that the Yorkshire Museum does achieve this. In some very subtle ways it brings the past to life for its audience. This is evident when first entering the museum as you are faced with an area representing a sort of roman forum. Large white slabs with Latin engravings are strategically placed so that visitors can sit and listen to the real life films of actors dressed in roman wear. These types of films are often seen in modern museums, for example, the castle museum, also in York. The idea of bringing the past to life in this way is a clever one and I am sure particularly kids will appreciate this simple form of interaction. Yet there is a definite element of cheesiness behind it and in this way I believe it is a technique that will not necessarily appeal to adults but they will withstand for the sake of the attraction it holds for

children. There are similar techniques used to appeal to the younger visitors, such as a small area in which children may dress up in complete roman wear and 'missions' that can be completed around certain areas of the museum.

Although so far this review may imply that children are more than catered for and this is the primary audience, the Yorkshire museum has not stopped in at least attempting to keep the adults also captivated. The most interesting display for myself was one showing skulls from Roman York. With a strong emphasise in my degree on osteology and biomolecular methods my eyes were automatically drawn to the wall containing 5 skulls. Yet more than just skulls this wall contained a real human face behind each specimen. This is a powerful and important empathic technique, as it makes the skulls quickly become to us real people, an idea which is often missing in these museums and in archaeology itself.



Figure 1. Figure 2. Sabertooth Cat Skeleton(Photo credit: Author).

This paper has aimed to give a review of the Yorkshire Museum and its educational and entertainment value to those tourists and Yorkshire residents alike that may enter its walls. I have chosen to focus on the best elements of the museum and the way in which it succeeds, while still mentioning its downfalls. The Yorkshire Museum is an affordable day out for any group, but similar to many tourist attractions it is more aimed towards children. This being said I do not doubt there is plenty of information, displays and even fun and games to keep the whole family enthralled. This does not render it a flawless museum, or even the best one I have seen, but if we see museums as a medium by which to inform and interest the general public in our past then the Yorkshire Museum is achieving just that.

8 An Interview With Charlotte Roberts

David N. Farnell (mailto:dnf500@york.ac.uk)

Professor Charlotte Roberts, of the University of Durham, is one of the country's foremost bioarchaeologists and palaeopathologist. Most recently she has published *Human remains in archaeology: a handbook*, which is perhaps one of the best written books on the subject of human remains. Professor Roberts gave The Post Hole a chance to ask her a few questions about her career and gave us her advice on breaking into the world of bioarchaeology.

DF- You started your career training as a nurse, what made you change careers in this way and was it a difficult career move?

CR- I wanted to do an interesting degree to prove to myself I could do it, so I chose Archaeology, and then intended to return to nursing. No, it wasn't a difficult career move because I clearly saw how my nursing background could be used in archaeology i.e. studying human remains. The reason I did not return to nursing is circumstance – I got the opportunity to do a masters degree, and then got offered a job as a research assistant on a project focusing on human remains and the rest is history. My nursing background prepared me well for interpretation of evidence of disease and its impact on our ancestors.

DF- As a self-confessed 'bioarchaeologist', you have literally written 'the book' on the study of disease, how important do you feel this is to the study of the past?

CR- It's a good base from which to work, tries to get people thinking about utilising multiple forms of data to understand health in the past (not just human remains), and emphasises the importance of contextualisation of data. It's not the final work though!

DF- Has having a background in another discipline helped with your research as a bioarchaeologist and palaeopathologist?

CR- Yes, because I have a medical background and I can understand how different diseases affect people in real life. It has also helped me realise that the same disease does not affect everybody in the same way (even down to bone level); everybody is unique and will deal with diseases differently, and disease will manifest itself in people in a variety of ways

DF- In what way do you feel palaeopathology has progressed over the past few decades and do you believe a move forward in this way is beneficial to the research area?

CR- Standards for recording have developed since the publication of the 1994 (US) and 2004 (British) standards for data recording this means comparisons of data between sites can be more reliably made. The development of ancient pathogen DNA analysis to diagnose disease is another development that has allowed us to learn more about the origin and history of disease than was possible



Figure 1. Professor Charlotte Roberts (Photo credit: Roberts).

before. However, it is a destructive process and we cannot guarantee that pathogen DNA will survive burial. There are also issues about whether methods used are robust enough to hold up to scrutiny. Histological and radiographic analyses have also advanced our knowledge.

DF- If there was any direction you would like to see the discipline of archaeology advance in over the next few years what would it be?

CR- In my field, more hypothesis and question driven population studies within context. I would also like us as a discipline to stop calling the skeletons we analyse interesting cases' and specimens' and treat them as once living people, as they are, and I feel we should make our work more relevant to the here and now, and the future, rather than do studies for their own sake'. In archaeology as a whole in the UK, I would like more publication of grey literature, and archaeologists not being the only people who make decisions about whether skeletons should be reburied.

DF- What is the most exciting project that you have worked on so far?

CR- Probably the pathogen ancient DNA analysis project I am doing now with Manchester University, looking at DNA of tuberculosis in skeletons from a wide variety of sites in Britain and the rest of Europe. We are looking ultimately at strain change in the bacteria that causes tuberculosis through time; this I think will inform the present and future of this devastating infection today.

DF- There are many BSc students in our department and I'm sure many others who are planning on entering your field, do you have any advice for them?

CR- It's a competitive market out there. There are many masters' courses in this field in the UK and therefore many graduates, and then many PhD graduates. The job market is limited, funded PhD places scarce and academic jobs very rare. If you accept that and still want to pursue this area for your career then it is very rewarding but be prepared for a long road to eventual success. I was lucky because when I entered this field there were no masters courses and few people doing PhDs in the subject and I was lucky to be around at the right time to get a job.

With thanks to Professor Roberts.

About The Post Hole

The Post Hole is a student run journal for all those interested in archaeology. It aims to promote discussion and the flow of ideas in the department of Archaeology for the University of York and the wider archaeological community. If you would like to get involved with the editorial process, writing articles or photography then please get in touch via email – (<mailto:editor@theposthole.org>).