

The Post Hole

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The Post Hole is a student run newsletter 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 please email: Katie Marsden (<mailto:km531@york.ac.uk>) or Gemma Doherty (<mailto:gjd500@york.ac.uk>).

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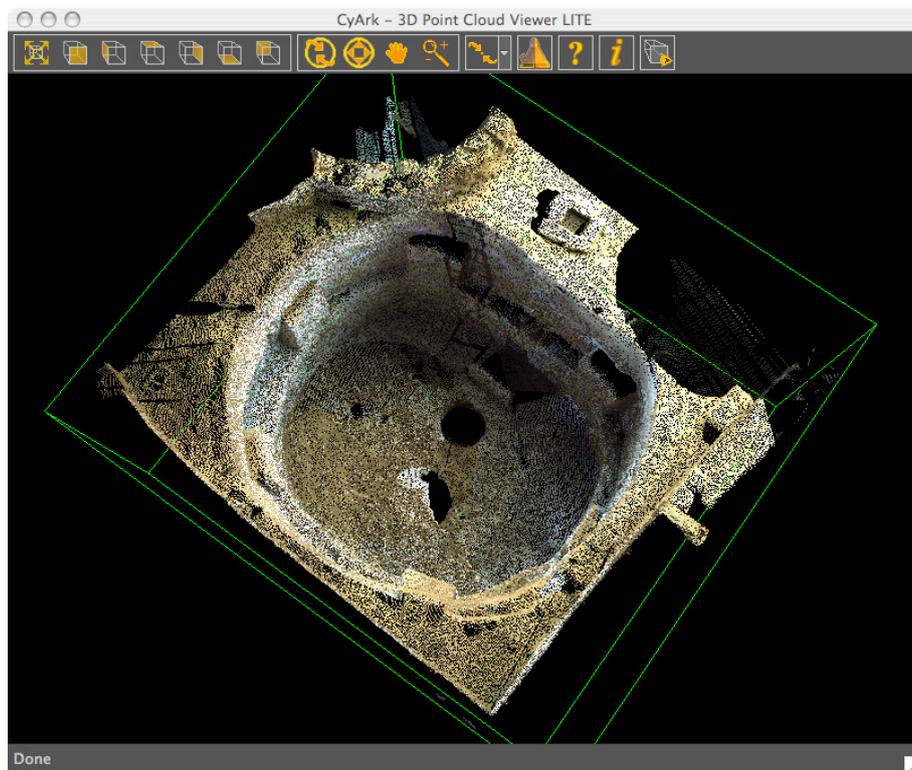
1 Laser Scanning to Assassin's Creed: What's Cool in 3D Archaeology

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Everyone is familiar with 3d visualisations in archaeology. From *Gladiator* to *Time Team*, these CGI models are ubiquitous. However, in the discipline of Archaeology itself, 3d visualisation has gone through a period of dwindling enthusiasm. It is seen as an expensive way to bring archaeological interpretation to the masses. But a few bright spots have emerged from the end of Archaeology's honeymoon with 3d. Here is my whirlwind tour of what's cool at present in the world of archaeology and 3d.

3d Recording

The convergence of powerful but affordable personal computers and methods for the rapid capture of 3d data has rescued archaeological VR from its decline into use solely as an illustration tool. Leading the way in the 3d recording revolution is laser scanning. A modern theodolite records 3d coordinate data one coordinate at a time. A laser scanner can record hundreds of points in a matter of seconds. The density and accuracy of this recording creates clouds of 3d points which are the equivalent of making a cast of the object or site being surveyed. The point cloud is so detailed, so complete and so rapidly generated that the temptation to use the technique for as many archaeological recording tasks as possible is very strong. There are major laser scanning projects active throughout the world with one of the most ambitious being conducted by the father of practical laser scanning Ben Kacyra. He has founded Cyark, a non-profit organisation that seeks to record and therefore digitally preserve as many important heritage sites as possible throughout the world. The fruits of this Herculean labour are available for all at Cyark (<http://www.cyark.org>). Login and begin exploring the world of point clouds and laser scanning.

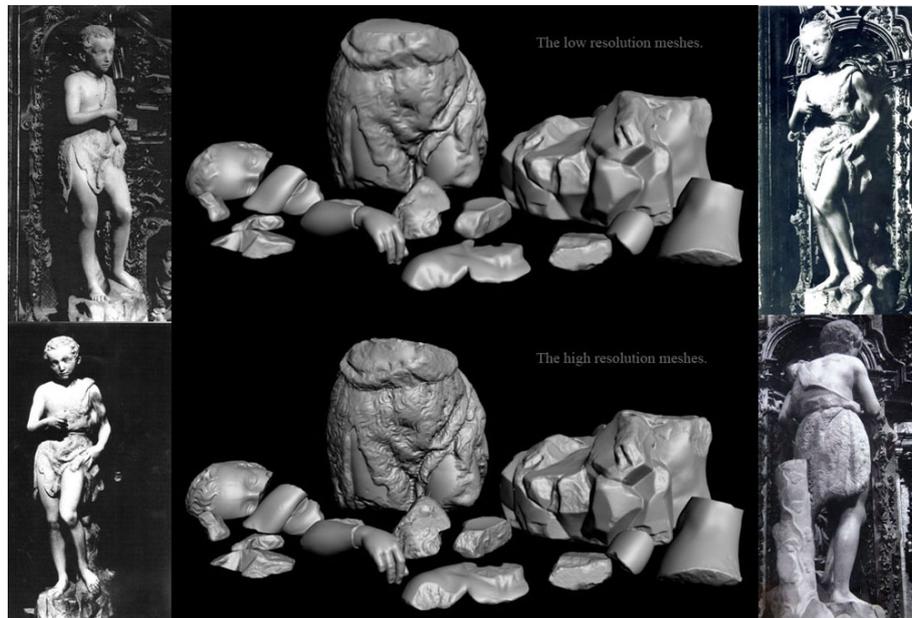


Cyark point cloud of Kiva H, Spruce Tree House, Mesa Verde National Park, Colorado, USA. credit: Cyark (<http://tinyurl.com/n2czcp>).

There are other ambitious scanning activities closer to home too. The Glasgow city council has commissioned the creation of a 3d urban model created by laser scanning every building within the Glasgow city centre (<http://tinyurl.com/68vwjk>). English Heritage has completed their evaluation of laser scanning and has published their definitive guide to the subject (<http://tinyurl.com/kqmxyn>). For many examples of laser scanning in action, just search for 'laser scanning' on YouTube. Especially cool are the videos made from various laser scans such as the landscape around Stonehenge produced with Lidar by Wessex Archaeology (<http://tinyurl.com/qqu3g>).

DIY Laser Scanning

When going through the YouTube offering you will notice that, despite proper laser scanning equipment costing hundreds of thousands of pounds, for around &#pound;30 anyone can make a laser scanner. It won't scan whole buildings, it's not terribly accurate, it's not even true laser scanning, but it is a fun toy and will allow you to capture the general geometry of small to medium-sized objects. The best DIY laser scanning is the David Laserscanner (<http://tinyurl.com/mdnmrh>), the software for which is free. All you need is a line laser, a computer and a webcam. The user gallery demonstrates some of the excellent results that are possible with this system.

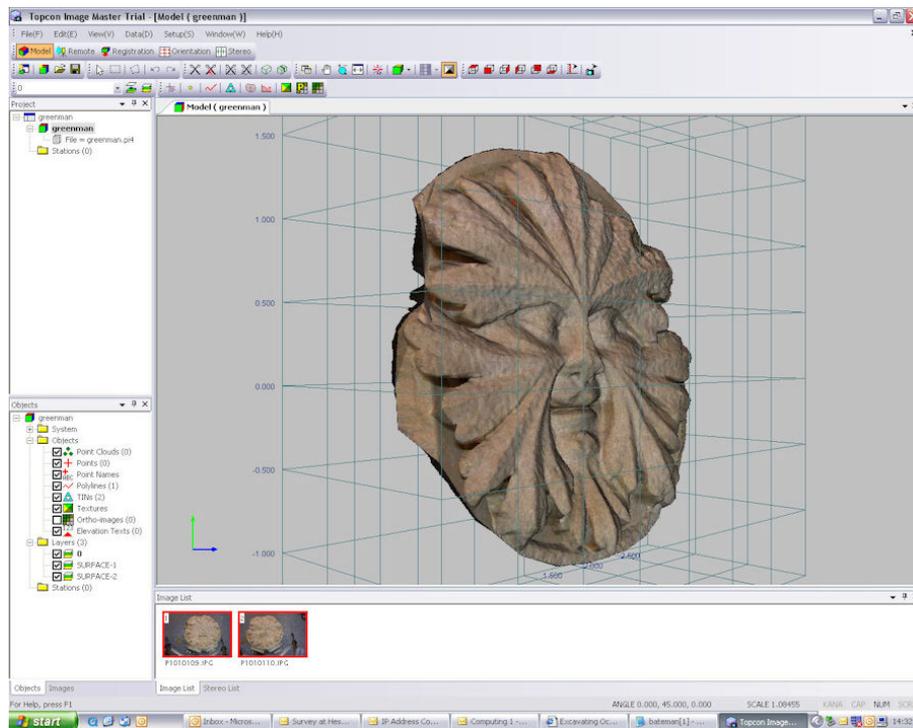


Reconstruction of a Spanish statue destroyed during the Spanish Civil War using laser scans of surviving fragments, scanned with a DIY David Laserscanner setup.

Credit: hal (<http://tinyurl.com/pt1s6f>).

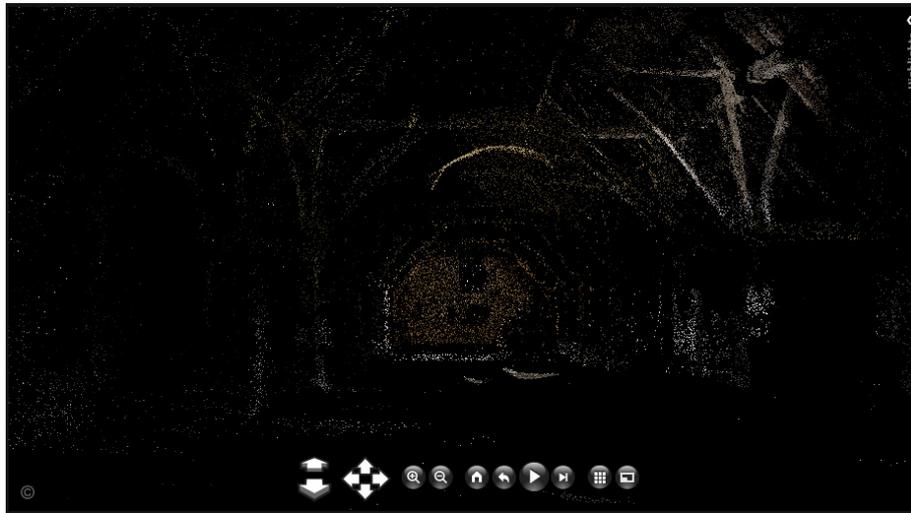
Photogrammetry

Of course, as I said, the David Laserscanner is not true laser scanning in that it does not rely on the laser for measurement. Any sharp, thin, bright line of light will work for this method. This is because this method is a ‘structured light’ method which is, at its core, photogrammetry. And photogrammetry is the leading challenger to laser scanning as a means of rapid measurement in 3d archaeology. It is cheaper (a few thousand pounds for professional-quality equipment and software), more portable (all you need is a camera), sometimes quicker, includes imagery as well as geometry, and can be just as accurate (depending on the subject and the setup). Photogrammetry has been used for decades in archaeology to create line drawings of sites in 3d. However, advances in computer vision research have made it possible to capture not just line data but surface geometry as well. The tool of choice for English Heritage and archaeological organisations (including this Archaeology Department) is a program called Imagemaster (aka PI-3000). A free viewer and many useful demo datasets are available from the UK supplier TerraDat (<http://tinyurl.com/mktm2>). There are alternatives. For many years a far less expensive but more labour-intensive and lower-grade photogrammetry package called Photomodeler (<http://tinyurl.com/pexucv>) is available. Photomodeler now has sister software that is capable of capturing 3d surface data just like Imagemaster – Photomodeler Scanner (<http://tinyurl.com/5r9n11>). While by no means perfect, this surface modelling technique is powerful and accessible. If you want to try it out yourself (and are studying at York), just let me know and you can use the Department’s version of PI-3000.



A photogrammetric model of a 13th century capital from Zaraka, Greece. Produced with PI-3000. Credit: author.

Of course, there are cheaper ways of doing photogrammetric modelling. If you'd like to work with less dense pointclouds in a more Photomodeler manner for free give Insight3d (<http://tinyurl.com/mqwcxw>) a try. This seems to produce automatic point clouds similar to those created by Photosynth. As I have said elsewhere (<http://tinyurl.com/kjc99n>), Microsoft appears to have not grasped the modelling potential of its Photosynth (<http://photosynth.net/>) software. This is probably one of the easiest and cheapest ways to do image-based modelling. There are numerous archaeological/buildings examples with the most impressive in terms of its audacity (photogrammetric modelling of the interior of a timber building is difficult). While the people at Photosynth still seem to see their software as a fancy photo album, there are ways to extract the 3d data behind the synths (<http://tinyurl.com/ogf9o4>) and these have led some to use it as a free photogrammetry tool.



Photosynth produced point cloud of the Great Titchfield tithe barn. Credit: Synth by Richard Haddlesey (<http://tinyurl.com/qs8w4q>).

Also free and capable of producing models more like those in Imagemaster/PI-3000 or Photomodeler Scanner is the Arc3d Web Service (<http://tinyurl.com/qoo8km>). It's a bit hit-and-miss (I've never managed to hit, but I haven't spent that much time with it), but the gallery of projects that have worked is impressive. To work with the data files Arc3d generates you need the even more impressive and cool tool Meshlab (<http://tinyurl.com/57365c>) (which can also be used to edit and cleanup models produced by PI-3000 and David Laserscanner).

Augmented Reality

3d data capture is the category of greatest growth driving 3d applications in archaeology. However, there are other areas where there are cool developments too and this is important since I have yet to see a convincing example of what one can usefully do with all of this 3d data. Perhaps one of the most interesting possibilities is Augmented Reality. Augmented Reality essentially overlays a layer of computer-generated content over a stream of video, typically from a webcam. Perhaps the most accessible AR tool is the AR Media Plugin for Sketchup (<http://tinyurl.com/4afncv>). This takes advantage of the free CAD program Sketchup (<http://sketchup.google.com/>) and allows users with a webcam to magically display an interact with their Sketchup models in realtime simply by moving a specially tagged piece of paper within the view of the webcam. Sound confusing? Watch this video (<http://tinyurl.com/9c7jnq>) and you'll see the potential of this kind of technology. By the way, watch some of the other AR videos on YouTube. Some are truly amazing. Archaeologists were early explorers of this technology with the Archeoguide (<http://tinyurl.com/otnvuj>) project creating a fully immersive AR headset to allow visitors to sites to see models of reconstructed ruined buildings in realtime. Another interesting, and here potentially lucrative development, is AR for mobile devices (<http://tinyurl.com/njw7pa>) but, as in so many things, interest in this seems to have dwindled in recent years. If you want to have a

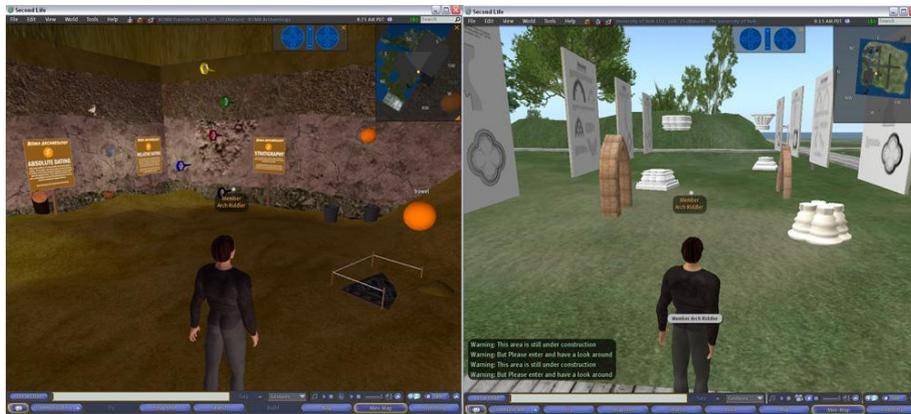
go at it yourself and don't want to buy the Sketchup plugin, then you can go to the AR sources – ARTag (<http://www.artag.net/>) or ARToolkit (<http://tinyurl.com/37bbc9>) and build your own AR applications for free – almost.



Augmented Reality of a reconstructed temple composited in realtime with video of the ruined site today. Credit: Archeoguide (<http://tinyurl.com/knq5ms>).

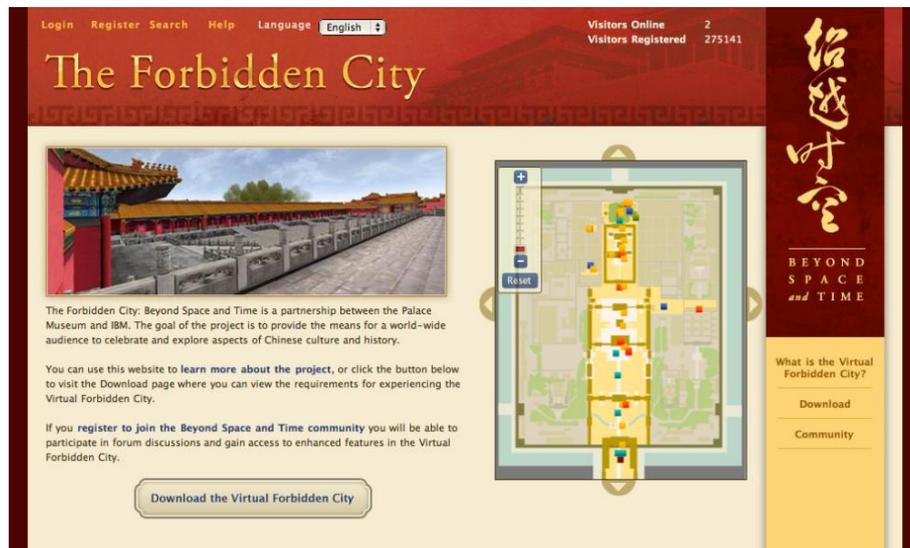
Game Engines

Taking a step further into archaeological virtual reality is the use of game engines and virtual worlds to represent archaeological and cultural data. This category is far more difficult to evaluate and pursue because it changes daily with many examples vanishing from the web overnight. At present there are a few interesting examples. First, though it may be showing its age, Second Life offers an interesting platform for archaeology. There is a virtual Catal Hoyuk (image) to visit and the Roma area provides an interactive tour of archaeological field practice (image). The University of York also owns an island which is somewhat empty but has a few contributions. One is the big red ADS cube the Second Life home of the Archaeology Data Service. There is also a small underwater element about the Venus Project (<http://tinyurl.com/p2yy6p>) (one of the most ambitious archaeological VR projects ever) and a small dig is out back. Beside the ADS cube is a growing assortment of architectural fragments which is meant to be a 3d virtual guide the basics of English medieval architectural history.



(L-R) Archaeology in Second Life: the Roma project; The architectural fragment garden in Second Life on the University of York island. Credit: author.

Beyond Second Life there are dedicated game environments with an archaeological or a material culture interest. One of the most interesting possibilities is the Virtual Museum of the Ancient Via Flamina at Rome (<http://tinyurl.com/pg5t98>). Here there is a rather large download of a standalone virtual environment which includes a reconstruction of the Empress Livia's villa (beware, it's a big download). What is so interesting about this is that it uses laser scanning data of the present-day site as its basis for reconstruction. Also, there are three levels of display which help the user to understand how much the reconstruction relies on archaeological data. The most ambitious archaeological visualisation in a game engine, however, is the online Forbidden City (<http://tinyurl.com/5o1jzs>). Sponsored by IBM, this game allows you to experience life in the pre-modern Forbidden City in Beijing. There are tours, games, fights, artefacts and a fairly active online community (thanks to Sha Gai for bringing my attention to this project). At the other end of the archaeological gaming spectrum is the (unholy?) alliance between historical/archaeological research, visualisation, and assassination that has resulted in Assassin's Creed. What warrants a mention here is that it is extremely popular, beautiful to watch, and based (at least in part) on a visualisation of Palestine at the time of the Crusades. Whether the 15th century Venice of Assassin's Creed 2 is as concerned with its historical and archaeological background remains to be seen.



The Forbidden City online. Credit: IBM (<http://tinyurl.com/5oljzs>).

Urban Complexity

The impressive complexity of the virtual Forbidden City begs the question of how the untidy reality of life can be represented in the too often sterile environment of 3d computer graphics. One final toy deserves a mention. In most of these archaeological visualisations, massive amounts of data are visualised. But what about the gaps in the data? Even the most complete archaeological investigation will leave many, many details unknown. An excavation can reveal the plan of a ruined city, but it cannot reveal every aspect of every above-ground feature of every building. This is where CityEngine is potentially important (<http://tinyurl.com/6lmgfv>). It is an engine for procedurally (i.e. the computer constructs the model based on rules and models provided by the user) building cities based on plans and a set of rules for combining architectural elements. The largest archaeological visualisation to date, the Rome Reborn project, uses CityEngine to visualise the housing infill between the well-known monuments (thanks to David Harker for showing me this site). It is truly impressive (<http://tinyurl.com/3a9up5>). Using this, vast cities can be reconstructed in a manner that avoids repetition and suggests the complexity of past urban landscapes. Similar procedural modeling in the future could help insert that level of messy' complexity that is an important but difficult to visualise part of the human past.



*Visualising a messy past: Rome Reborn. Credit: IATH
(<http://tinyurl.com/ryxksg>).*

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1. Masinton, A. (2008) 'Review of *ImageMaster* Close-Range Photogrammetry Software by Topcon (<http://tinyurl.com/kjc99n>)' in *Internet Archaeology*, 25.

Related Articles

1. Photogrammetry Using PI3000 (<http://www.theposthole.org/read/article/5>) in Issue 1

2 The Career of Lady Lara Croft: An Expose

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Further to Mr Rounce's in-depth breakdown into the careers of Henry Jones Jr and Rene Belloc we feel that it would be wise to offer a similar insight into the career of one of archaeology's most enigmatic figures. Her career thus far, has been one that has attracted much public attention. Indeed she has become something of an ill-advised icon for the discipline in some quarters, but beneath her public persona lies a dangerous and delusional mind, that uses her considerable talents to build her cult of personality and with it do unspeakable damage to the archaeological record and indeed the ecological one as well. I refer, of course, to the self-styled 'adventuress' Lady Lara Croft.

She has received serious criticism recently, following a series of legal tussles with the World Wildlife Fund. At the top of the mountainous list of allegations against her is her supposed involvement in the extinction of a hitherto unknown species of Nordic Yeti (*Gigantopithecus nordicus*), which is said to have fallen foul of the aristocrat's dubious field practises. When asked about her involvement in this case, Lady Croft has gone on record as saying that the animals simply 'got in her way'. She seemed not to take kindly to the accusation that she had, in fact, been encroaching on their territory when the animals confronted her.

Look', she said to a bewildered press audience, you cannot make serious archaeological discoveries without upsetting the local environment in some way, these discoveries are, actually, of extreme importance so it stands to reason that you should expect a greater impact on the local environment.'

This, following her previous fines for hunting the extremely rare breeds of gigantic spider, has ensured that Lady Croft has remained in the limelight in recent times. However, aside from her lack of respect for conservation practise, this poster girl for archaeology has shown some other disturbing tendencies in her archaeological career.

What little evidence remains of her undergraduate career testifies to this. She first came under fire at the age of nineteen, criticised whilst on her training dig for extremely unusual behaviour. Her supervisor recalls one confrontation, the young first year feverishly attempting to – in her words – 'complete' the remains of a partially destroyed Roman Mosaic. Upon completion of her small section, the supervisor watched dumbfounded as she stared about the site, apparently waiting for something to happen. When nothing did, she left her part of the trench to explore the site, upsetting complete ceramic vessels in the search for, she claimed, a magic' key.

Despite these unusual practises, she remained a popular figure around campus, especially credited for her extra curricular activities. Amongst some of the more orthodox societies, Lady Croft was president of FreeRunSoc, Secretary of the Cricketing Team, and Treasurer for the short lived University Advanced Combat Society. She competed and earned medals in cross-university championships for all these societies, and ensured her place in campus history as a well-beloved alumni.

However her problems seemed to intensify when her extra curricular activities began to converge with her academic career. Rumours abound that she would climb ruins to lay the surveying lines, hop from trench to trench over the heads of her fellow students, and could often be seen balancing and performing gymnastics on the site shed. It was a result of these high jinx that led her professors to suggest she did not pursue a further degree in the subject.

This did not dissuade the fledgling field archaeologist from archaeological feats outside of academia. These adventures are funded out of her significant personal wealth, accrued by her father, and undertaken to carry on his archaeological legacy. Despite labelling her explorations as acts of discovery, precious little archaeological information is known about the sites that she has apparently unveiled. This is indicative of her disdain for publication, and despite claims in the media that she has found the site of Avalon, Atlantis, and Valhalla, the artefacts that she has retrieved were not published in any suitable peer reviewed journals, nor is there any evidence that suitable archaeological excavations were carried out on-site. So far she has not expressed her opinions on archaeological theory or practice, nor given any lectures on her more recent projects.

Her academic silence has led to further criticisms of her practise over the years. Religious groups worldwide have petitioned the Croft Estate for the return of their most sacred artefacts, and have attempted various unsuccessful suits against the adventuress for her repeated desecration of religious sites. These charges vary from the shattering of ceremonial vessels and the theft of the objects interred within them, to out and out violence within temples and the destruction of altars and local deities.

When more closely examined, the career of Lady Croft paints a worrying picture. Having established the cult of personality around her self, the young archaeologist seems to have never achieved the academic promise of her more conventional father. Despite this, her love for the more glamorous side of archaeology has driven her into the most poorly understood areas of the world, where outside of any official sanction, she has been able to do unspeakable damage to native cultures and wildlife. As her legal problems escalate, stories from her continually unpublished field reports become ever more ludicrous, the career of this wayward adventuress is coming under more and more fire from mainstream archaeology. Poster girl for the discipline she may be, but now it seems her abhorrent behaviour is starting to catch up with her. Serious archaeologists will have to look elsewhere for their role model.

3 Interview with an Archaeologist: Simon Stevents, Senior Archaeologist with Archaeology South-East

Katie Marsden (<mailto:km531@york.ac.uk>)

1. **What is your job title?** I'm a Senior Archaeologist at Archaeology South-East, which is the commercial unit of University College London's Centre for Applied Archaeology (well, you did ask!). Our office is in Sussex, and as the name suggests most of our work is carried out in the south-east of England. I'm also an Associate Tutor in Archaeology at the University of Sussex, just for something to do in evenings and at weekends...
2. **What are you current projects, museum or personal?** Despite the economic downturn, I'm personally still pretty busy doing evaluations, watching briefs and excavations. I've also got a shamefully large backlog of sites to write up. I'm in the midst of setting up some Community Archaeology in a field down the road from my house too.
3. **What first got you interested in Archaeology?** A combination of Michael Wood and my older brother and sister. I can remember being fascinated by his programmes on TV (Michael Wood, not my brother...). My siblings used to bury toy cars in the back garden of my parents house for some unknown reason, so I got used to the idea of digging up ancient rusty treasure from an early age.
4. **How did you get into the Archaeology careers field and your current job?** When I graduated from York in 1992, the job situation was arguably even worse than it is today. I did the usual of sending my inexpert CV to various units but to no avail. It was actually a thank you' letter to a Project Manager at Archaeology South-East for helping me with my dissertation that kick-started it all. A couple of days later the phone rang and it was him asking if I wanted a couple of weeks of work. For the next 18 months I dug on and off for Archaeology South-East (often a day on-site followed by a couple of months on the dole). And then in 1994 I was offered a contract. I've been at the unit ever since, working my way up from humble excavator to even humbler site director.
5. **What kinds of experiences have got you where you are today?** Not being frightened of a bit of hard work...and listening to advice. I was lucky with my training digs too: Dolforwyn Castle under Lawrence Butler, and Sutton Hoo under Martin Carver. Both interesting sites with inspiring directors.
6. **What are some of the best parts of your job?** The concept of getting paid to do something as wonderful as archaeology, either in-the-field or as a tutor. I've never lost the sense of excitement of finding things, and I hope I never do. Walking out on an archaeological site in the morning still feels like a privilege to me.

7. **And some of the worst?** Dealing with openly hostile developers (thankfully a rare experience). Getting up far-too-early and scrapping ice off the car to drive to an inhospitable site and move mud from one place to another is never that great either. But I think the good bits massively outweigh the bad bits to be honest.
8. **How much do you have to deal with members of the public?** Regularly. People are generally interested if you're digging a hole in a plot on their local High Street. Once we've got past the inevitable questions about Time Team, you can quite often have a good chat. And there's always the chance of tea and biscuits appearing if they live nearby! I'm also the unit's Widening Participation Officer so I get to encourage a range of people to come and take an active part where possible.
9. **What are your thoughts on the state of the archaeology field in this country? Do you think it's adequate, is there any room for improvement and if so where?** Clearly the economic downturn is having a serious affect on the commercial units. Basically if there's little or no new building work, there will be dramatically fewer PPG16-triggered archaeological projects. Before the current crisis, poor wages were the usual talking point: they have always have been low compared to other industries. But if you want good wages and a secure job, go and work in a bank. Oh, hang on...
10. **How do you see the current Archaeological climate in terms of jobs in this country?** Bad, and there's no point pretending otherwise. However, there are a few digging jobs out there, you just have to look a bit more carefully for them these days. And it will get better in time, and then we'll return to the situation of a couple of years ago, when there were actually too few skilled archaeologists to fill all the available job vacancies.
11. **What advice do you have for students wishing to get a job in Archaeology?** Join the Institute for Archaeologists (until recently the Institute for Field Archaeologists). There's a student grade. This just shows a genuine interest, and they publish an excellent weekly job sheet. Look at web-sites like BAJR. But arguably your best bet is to get in touch with the local unit wherever you're going to be living and ask to be put on their database of potential diggers. And do as much digging as you can (sounds obvious, but I know of people with an MA in Field Archaeology who barely know one end of a trowel from the other). But most important of all, learn to drive and try and get a car: you're potentially far more use if you can get to the site under your own steam.
12. **What are your experiences of job interviews?** I haven't had one for years. I got offered both the archaeological jobs I applied for back then, so I must have done something right.
13. **Do you have any interview technique tips?** Just be honest, and on time. And make sure your CV looks good and doesn't have any silly mistakes in it. Hopefully a CV bulging with relevant experience will make any interview a mere formality.

With thanks to Simon Stevens, UCL

4 Archaeology, Ethnography and Cosmology: Part 2

Owain Mason (<mailto:owainm@btinternet.com>)

From the previously discussed ethnographic studies of the Berber and Balinese households it is clear that many traditional societies' perceive the world in a different way to the way we do. These perceptions can be based on a number of ideas, for example, gender or the geography of place. Through these studies we can see how these may impact and help create the spatial orders within the societies. This is but a small selection which cannot wholly explain the diverse nature of how other communities perceive the world and in turn order their space. How the ideas and concepts identified in these ethnographic observations have been applied will be explored through the studies of:

- Mike Parker Pearson's *Food, Fertility And Front Doors In The First Millennium BC* (1996)
- Colin Richards' *Monuments As Landscape: Creating The Centre Of The World In late Neolithic Orkney* (1996a)

Aspects of Joanna Brucks *Body Metaphors And Technologies Of Transformation In the English Middle And Late Bronze Age* (2001) will in addition be considered. How ethnographic studies and their subsequent employment, often as analogies, have impacted on interpretations of cosmology in European prehistory will be summarised towards the end.

Cosmology and ethnography in archaeology

For Richards, his study of the Balinese household led to a re-appraisal of houses on Orkney (Richards 1996: 171b) particularly in regard to how cosmological principles come to be embodied in architecture. In turn the architecture comes to act as microcosm and metaphor for the world as a whole. These ideas are at the centre of *Architecture and order: Approaches to social space* by Pearson and Richards (1994), which aimed to illustrate how architecture embodies and expresses certain principles of order and classification (Pearson and Richards 1994: 38). Ethnographic studies of cosmology are most commonly employed in an analogous way such as in the case of Richards's studies in the Orkneys. Richards' reappraisal of structures such as those at Skara Brae and Barnhouse draws upon ideas of a communal attitude to the cosmological ordering of space. At Barnhouse one structure came to be identified as a communal meeting space centred on a hearth, which acts as the *axis mundi* for those present. Boivin (2000) employs a similar idea of using ethnographic ideas as a way of explaining certain practices, in this case the re-flooring of homes in Catalhoyuk. Boivin makes the analogy between this practice and the Indian practice of re-plastering floors based on seasonal patterns (ibid: 367). The issue of analogy will be touched upon later.

Pearson's study provides an exploratory investigation into the potential for reconstructing symbolic systems in Southern Britain during the first millennium BC (Pearson 1996:128). As with Richards, Pearson focuses on the structures

and applies concepts derived from ethnographic studies in an effort to understand cosmology in round houses; in particular the idea of orientation and divisions within. Hard data from investigation is coupled with an awareness of ethnographic examples in order to explain the trends seen. As outlined in his introduction, Pearson draws upon a number of studies, not just the one, as is the case with Richards. Pearson takes broad ethnographic ideas and concepts that exist out of our way of thinking and applies them onto the Iron Age roundhouses. Applications of such data raise questions around how an awareness of ethnographic examples should be deployed when looking at prehistory. The idea of space and time being focussed and embodied in particular objects is an idea utilised by Joanna Bruck (2001) when she looks at quern stones in the Bronze Age. Bruck interprets the quern stone as acting as the central metaphor like the loom in the Berber household. These studies are but a small sample of those that have either employed ethnographic examples directly or indirectly. Other examples include the application of Madagascan views of material metaphors and their application to the ritual landscape of Stonehenge by Pearson and Ramilisonna (Pryor 2004: 230). In particular the idea of stone representing death and wood for the living (ibid: 321). The issues and ideas raised by ethnographic studies are considered in light of the evidence as a way of approaching a more holistic understanding of European prehistory.

Conclusion

Fundamental to the application of ethnography in particular to cosmology is understanding how we employ analogy. Whilst ethnographic studies can impact positively on archaeology they can also impact negatively by being employed in an uncritical manner (Wobst 1978: 303). It is worth considering the way in which analogies are made. An analogy is, at its most basic concept, the comparison of two things that seem similar and thus provide the basis for inference. This inference can be made either directly or indirectly. The indirect form being to try and build a set of ideas you can apply to any context, as in the case of Pearson roundhouse study (1996). In the majority of cases ethnography is often used indirectly and as such is rarely cited directly. By employing analogy indirectly one avoids stating outright that one is the same as the other, rather it is employed more subtly to provide frameworks for understanding.

What the ethnographic studies of the Berber and Balinese households do is to highlight a number of ideas and concepts that should perhaps be considered when interpreting ancient European cosmology. These ideas include the relationship of people and ideas to architecture, the way in which all things – including the arrangement of domestic space – can come to embody cosmological ideas. That this relationship can in some cases, as in the Berber household, be quite complicated and, as such, any material remains would do little to illustrate the issues.

The fundamental point being that metaphors are an ever present factor in societies and can be played out in a number of forms, most of which are now unrecoverable to the archaeologist. Hence Richards perception of the prehistoric past as an alien entity (Richards 1996:171b) where it is not a paucity of evidence (Thomas 1991:2), but rather defining what evidence is significant and the interpretive frameworks employed that is the issue. Ethnography no doubt is one such investigative tool that forms a component in making interpretations. It

cannot be used on its own to provide direct answers, but does serve to highlight the difficulties and issues in interpreting the data due to the complexities of belief structures. Archaeology is a subject area that requires a multi-faceted approach if we wish to understand the past fully, of which ethnography is merely one facet.

Notes

1: *Axis mundi*: The central point of any cosmological system essentially means the centre of the world. Provides a focal point and also a reference point for members of the community. An axis mundi can exist within the larger landscape and in the domestic setting.

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5 A year as a post excavation Research Assistant

Harry Robson My name is Harry Robson. I am an undergraduate student at the University of Bradford reading Archaeology BSc (Hons) (4 years). This includes 2 years of studying at Bradford University, followed with a placement year (a year working in industry which also constitutes a diploma), followed by the final year back at Bradford. For my placement I am working as a research assistant on the Star Carr project and this article describes what life as a research assistant entails.

Background to the project

At the beginning of my placement year, I carried out a season of field work on the current excavations at what is probably the most well known Mesolithic site, Star Carr in the Vale of Pickering, which dates to about 9000 cal BC.

The site itself was discovered in 1948 by John Moore, a local enthusiast who found flint scatters whilst field walking along drainage ditches. He found some flint and bone eroding out of a drainage ditch at Star Carr and conducted a small scale excavation. This work was brought to the attention of Dr Grahame Clark at Cambridge University, a specialist in the Mesolithic who had studied sites in Denmark and wanted to locate a waterlogged site in Britain that had good organic preservation. From 1949-1951, Grahame Clark excavated in the area south of where John Moore had excavated a small trench. In these excavations he and his team located the ancient Lake Flixton shore as well as a most intriguing Mesolithic assemblage (Clark 1954). This included faunal remains and flint scatters but most interestingly it also contained 21 red deer antler frontlet head-dresses' with the antlers still attached, that had been worked with signs of antler reduction and hollowing out of the cranium. Debate is ongoing as to the actual function of the frontlets, however interpretations have ranged from the simple use as a hunting disguise for stalking the deer to a possible shamanistic ceremony. However further research by Chantal Conneller has suggested that they were used ritually as a means of becoming deer: a corporal transformation (Conneller 2004).

In addition, there were 192 barbed antler and bone points (measuring c.14cm in length). What is fascinating is that these are very rare within that landscape and indeed further afield: e.g. no other barbed harpoon points are found at any of the other 15 sites around the lake except for a fragment from both Flixton Island and No Name Hill, and they constitute over 9% of the total number of barbed points found in the whole of Britain.

Apart from a brushwood platform, surprisingly few wooden implements were recovered although there was a birch-wooden paddle blade which would have possibly been used to propel a dugout canoe across the lake (Clark 1954). Further finds included elk antler mattocks (26 centimetres in length and perforated for the fitting to a wooden haft), stone axes, at least a dozen perforated shale beads, animal teeth and amber: all of which are rare finds and added to Star Carr's uniqueness.

In the 1980's the Vale of Pickering Research Trust carried out further excavations led by Tim Schadla Hall, Paul Lane and Paul Mellars (Mellars and

Dark 1998). These excavations extended eastwards from Clark's trenches and evidence of a humanly worked wooden platform was excavated as well as another barbed point, further flint scatters and more fauna. Furthermore a great deal of augur survey was carried out around the edges of the lake edge shore and pollen cores were taken and analysed by Petra Dark. The results after the analysis proved that a series of burning phases took place at Star Carr. Overall, the evidence suggests that human activity began around 8770 BC which was associated with the burning of the local vegetation in particular Phragmites reed swamp and that occupation occurred for a period of about 80 years, then there seems to have been a lapse in occupation for 100 years followed by a second episode of occupation and burning for some 120 years that ended in approximately 8460 BC, resulting in significant changes in the local vegetation (Mellars and Dark 1998).

In 2002 field walking took place in the Star Carr field and from 2004–2008 new work has been carried out by the Vale of Pickering Research Trust. A series of test pits were excavated in both the Star Carr field, specifically along the peninsula as well as north of the Hertford cut in 2008. Furthermore large scale excavations were carried out on the lake edge (2006/2007) and in the dry land area (2007/2008) that ultimately led to the discovery of a structure. Further questions are still unanswered concerning the full extent of the site, its type and character and this ongoing work is aiming to answer these questions. Furthermore augur and contour survey and test pitting have revealed the site is much larger than previously known and that less than 10% of the site has been excavated overall (Milner 2007). Further analysis is ongoing into how and why the site is deteriorating which has resulted in two 'jelly bones' that have been found. In these cases the collagen has been displaced into gelatine probably because of the shrinking of the peat combined with an increase in acidity as well as fluctuations in the water table. Kirsty Penkman and Hannah Koon in the departments of Chemistry and Archaeology are analysing these.

Work as a Research Assistant

In conjunction with this ongoing work I have been a research assistant on this project. The work that I have carried out has involved cataloguing and archiving the Star Carr material in the archive and holdings at Kings Manor, University of York. In addition, I have also been fortunate enough to have created catalogues of all of the faunal remains from Seamer Carr C, B, K, L and N, Flixton School, No Name Hill, Flixton Island, Flixton 9, Site D, VPE and Barry's Island, which are some of the other early Mesolithic sites surrounding the ancient Lake Flixton.

During the last season of excavation at Star Carr in 2008 soil sediment samples were collected from each of the grid squares in the trench SC23. I then carried out flotation of these sediment samples in the autumn. The process carried out was wet sieving the deposits through a 500 (micron) sieve and collection of the floated residue in a 300 sieve. Prior to flotation the sediment had been weighed and this weight gives a rough estimate to how much soil was lost via flotation. Throughout many of the soil samples a great deal of natural and worked flint was noted upon flotation. Other anthropogenic materials included bone, charcoal, wood and burnt wood, red ochre, snail shell and desiccated peat. Sorting of these samples is ongoing with the help of volunteers from the department, and this is producing similar material to that listed above.

I have also overseen the washing of over 10,000 flints from the recent excavations and field walking. In washing these flints I have been able to teach volunteers the basics of post excavation as well as flint type identification and signs of use wear and retouch. In some cases databases were created showing the weight, length and colour as well as the flint typology of some of the flints from the initial field walking in 2002 and 2004. In association with this work many of the flints have also been labelled to museum exhibition standard in advance of refitting of the flints by Dr Chantal Conneller.

Other tasks carried out have included analysing some of the faunal remains and removing those known to have been of horse which are to be AMS dated by Roger Jacobi as well as ascertaining bone samples from 2007 and 2008 which are to be ZooMed. This process accesses the protein in the collagen of the bone and states the species/genus of the sample being processed, through the use of modern comparisons. This data will provide a very detailed spatial understanding of the faunal remains at the site.

In addition, I have been given other opportunities this year, including the thin sectioning of oyster shells from Havn under the guidance of Eva Laurie and Nicky Milner. This resulted in a specialist report which we hope to publish. I have also travelled to Saudi Arabia as part of Geoff Bailey's ongoing research into shell middens and the movement out of Africa. This summer I will also return to Nokalakevi, Georgia (ex USSR) – a Hellenistic Necropolis – as well as Havn in Denmark, which is a Mesolithic shell midden to carry out further seasons of excavation.

Initially working without supervision was unusual however once certain tasks were set and then met to deadlines it increasingly became easier to undergo such work alone. Perseverance and a hard working ethic also aided me in such tasks which others may have seen to have been monotonous. Furthermore the benefits from volunteering have also opened certain doors to gain further experience and work with specialists, as in the case of gaining shell experience in Saudi Arabia as well as the opportunity this August to work with Prof Soren Andersen in Denmark.

I believe anyone who wants to partake in such activities needs a certain number of attributes including enthusiasm and motivation primarily. Other such qualities include good communication skills, the ability to work independently as well as within a group, to work to a time frame and meet deadlines. However surely the greatest benefit most of all is that I have gained a great deal of experience which will be a good addition to my CV.

Overall it has been a worthwhile placement year and I have learnt a great deal regarding post excavation as well as overall knowledge of Mesolithic research in general.

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6 Housing the Renaissance Man: An Introduction to Privacy in the Post-Medieval Country House

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Books and reading – with the moment of solace they provide – are what I personally think of when I think about privacy. We all have our preconceptions as to the nature and value of privacy and yet if we look back at the development of the word we shall see that it is not as simple a concept as we may think.

The Oxford English Dictionary defines privacy as the state or condition of being alone, undisturbed, or free from public attention . . . a private place; a place of concealment or retreat; a private apartment. I think this is the concept of privacy with which most of us are familiar in our present day lives, but it is worth looking at how this concept has changed over time.

David Austin (1998) has looked into the usage of the words 'privy' and 'private' throughout the historical period and has highlighted the evolution of the word. In Old English there is no word for 'private', with the nearest meaning 'secret' or 'one's own'. 'Private' begins to make an appearance in the late fourteenth century but with a different meaning to our modern sense – as the antonym of 'common' or 'open'. It became popular during the fifteenth century with its rise in legal documents, but it is not until the sixteenth and seventeenth centuries that 'private' evolved into what we understand it to be today – the opposite of 'public'.

The evolution of this word coincided with an increasing emphasis on the concept of the 'renaissance man' and individuality. As Johnson points out, it is challenging to have a concept of privacy without an emphasis upon the individual (Johnson 2002). As people became more focused upon their individual place in the scheme of things it is argued that their need to find a space where their thoughts would not be interfered with increased. As this need increased, so did the requirement for words to describe this behaviour, aiding the evolution of the meaning of 'privacy'.

So how can we look at privacy?

The first and most important question is one which I have already mentioned 'What is Privacy?' As this is a historically specific term it is important to understand its meaning in the period being studied and the connotations attached to it. With any period you need to look at whether there is any real change in the desire for or the definition of privacy. If there is, the causes behind such an alteration must be questioned. What is meant by privacy, and the importance placed upon it, is influenced by a wide range of social, cultural, political, philosophical and religious ideas. Therefore understanding the changes occurring in the society which is being studied is of great importance.

To complicate matters further, the definition, desire and ability to obtain privacy also varied from person to person, especially when gender, age and class are taken into account. A lord and a servant may have had the same desire for privacy, but the ways in which they could achieve this, and their level of success at finding it, differed greatly. Gender also played a huge role in the nature of privacy which a person could have achieved, with 'male and female zones' in a

country house being different in nature, and often designed by a male architect or patron. Children would also have experienced a very different side of privacy than the adult members of a country house household, with little to no choice in the locations they spent time in. If these different relations to privacy are not taken into account it is likely that a very one-sided history will be presented, with a large number of people remaining invisible and inaccurate conclusions drawn.

Is it possible to see' such an intangible concept from the archaeological, historical and architectural record?

There are many ways in which this could be approached, from looking at the development of particular rooms, to the changing use of traditional rooms. Changes in the plan form and architectural detailing of a country house are likely to develop alongside these changes.

'Private' rooms can be broken down into two subcategories: those in which a person can get privacy and those which facilitate privacy in other rooms. The former includes closets, studies and boudoirs. Such rooms are designed to provide the lord, lady or their guests a level of privacy, in which to read, work, or relax. Rooms which facilitate privacy include corridors and service stairs. These help guarantee that people of different social spheres did not have to interact unexpectedly and kept services hidden from guests. The layout, size and frequency of these different rooms can shed light on the importance placed upon privacy in a particular country house, and can be studied through the plan of the building. As can their relationship with each other and the rest of the house.



A room in which privacy was available Mr Wood's Library, Temple Newsam. Credit: author.

However more generic rooms within the country house could also provide a level of privacy, albeit a changing one. The use of chambers, libraries and salons altered throughout this period, and the use of any one room changed depending on the time, season, and the number of guests staying at the house among other things. This changing room use can also shed light on the form of privacy in a country house, but is more complicated to do. Rather than just looking at the changing form of the plan, this involves documentary research, into both intent and reality (if at all possible) as well as looking at the material culture of these rooms.

So, does any material culture link to privacy? If so, what are they?



Light fitting, Chatsworth. Credit: author.

It is likely that certain fittings, fixtures and furniture hold connotations of privacy to each of us: for example, desks, lock-boxes, and beds with curtains. However, there is a far greater set of material culture which relate to privacy; ranging from art and tapestries which encourage a homely, private feel to books, stationary and lighting which can set the tone for work and solitary contemplation within a room. When looking at privacy it is important to look both at the remaining material culture and those recorded in inventories to piece together the set up of the rooms being studied to truly see the level to which a room would have promoted or discouraged privacy.

Hardwick New Hall, in Derbyshire, is one of the famous country houses in England, especially due to notoriety of its creator: Bess of Hardwick. One of the most remarkable things about Hardwick is the survival of the inventories created after Bess's death. These allow us to glance how Hardwick Old Hall,

New Hall and Chatsworth were furnished, and what the rooms are referred to as in 1601. Such a glimpse into Bess's life is fascinating and you can tell a huge amount about room use as well as Bess's personal quirks. As Thornton (2001) points out in his commentary on these inventories, Bess obviously felt the cold: her bed being dressed with eight curtains and no less than fourteen blankets. There are sixty-five separate rooms which are covered by the inventory and I don't have the time to go into what each rooms tells us about privacy here. I'm therefore going to focus upon Bess's personal withdrawing room and bedchamber.

Both of these rooms are filled with tapestries decorated with people, forests and Bess's coat of arms, with the withdrawing room being larger and more lavishly decorated. In her bedchamber Bess opted more for comfort than for show with heavy wools being used instead of the more sumptuous velvets and damasks used in other rooms. This suggests that it would only be close, personal guests which were granted an audience here, if any, as there is a limited amount of 'show' in comparison to the more open, state rooms.

The comparative number of chairs and stools present in each room can also shed light on the differing room use. Bess shared her bedchamber in the New Hall with her granddaughter Arabella. It is therefore not too surprising to find two chairs with matching footstools in her bedchamber. On top of these there are 5 other stools and 4 desks of differing sizes and decoration. In comparison, her withdrawing chamber contained 11 stools as well as 2 chairs for children and three tables. These – plus the more sumptuous furnishings of the withdrawing room – suggest that it was a more public area, allowing room for the entertainment of more people. On the other hand, her bedchamber is likely to have been used as a more private space where Bess and Arabella could carry out their housekeeping and correspondence. Bess was a notorious letter writer keeping in almost daily contact with her steward. While the thick curtains



Lock, Chatsworth. Credit: author.

on the beds would have provided a level of personal privacy, this is more the privacy of a bedroom in a hall of residence rather than in a private house: one which is used to provide a level of hospitality as well as a location for sleep. Bess also had the ability to store a lot of personal items and values away from the prying eyes of others in the chest, 5 trunks, a box and 8 coffer in her bedroom.

It is obvious from the material culture that privacy, if defined by the modern idea of 'time on one's own' was very difficult or nigh-on impossible to achieve. However, if we think back to the early modern definition of privacy as the antonym of common or open, privacy was easy to achieve by withdrawing away from the gaze of the household to a more enclosed to which entry was restricted.

Right, I think its now about time to conclude this whistle-stop tour of privacy in the post-medieval country house. We have seen how privacy is a complex, historically specific concept, which only began to take on its modern meaning in the sixteenth and seventeenth centuries. As such the search for the effects of privacy on the material of country houses is a complex one. It must take into

account the plan of the building, the material culture (including the building itself and its fixtures and fittings), and a wide array of documentary sources which may shed light on the room use and attitudes towards privacy. Whether we are looking at private' rooms or the private use of more generic rooms, we must take into account the differing experiences brought about by class, gender and age. However, I hope this article has shown that it is possible to look at an intangible concept through the material culture of the past; shedding light on an aspect of life which affected the everyday experience of those living and working in a country house.

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