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Unreviewed Mixed Matters Article:

Conference Review: 8th Experimental Archaeology Conference, Oxford 2014

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The conference unofficially began in the Royal Blenheim pub at 6 pm on Thursday evening. Conference staff and attendees filtered in throughout the evening eventually filling the back room. The pub had excellent food and a good variety of local ales. Those who managed to brave the flooding introduced themselves and got to know other attendees. It was a nice way to start the conference since I did not know many of the others. Hearing about others' research whetted my appetite for the upcoming presentations.

> “Papers were given by a wide range of people, not all of whom were academics or professional archaeologists. The conference was welcoming and included people who were interested in archaeological experimentation. This gave a welcome opportunity for people outside the field to bring their expertise to archaeology and provide new insights to interpretation of archaeological methods.

Travelling was unfortunately difficult due to flooding and attendees coming from Reading or London had to take a circuitous route that turned a half hour commute into close to two hours on combinations of trains, the underground and buses. However, the long commute was worth the effort.

The first day of the conference was held in the T.S. Elliot Hall of Merton College, one of the Oxford colleges just south of the High Street and tucked behind the cathedral. The theatre was a good size for the conference and well laid out, with a large screen for the PowerPoint presentations. Our welcome pack included a contact list of all the attendees, something I found very useful and one of those basic ideas that is too often overlooked. Another brilliant idea was having the conference programme printed on the back of our name badges. Rather than having to flip through the book, we could take a quick glance at the badge to see if there was time for one last cup of coffee before the next session began.

Mark Pollard opened the conference and the first papers introduced some interesting solutions for problems encountered whilst using ancient technology. James Russell explained how the circumference of the earth could be calculated in the Neolithic using materials available then. Next Stephen Blakely introduced a cylinder and cradle pulley system that was capable of moving 5,000 lb. stone blocks in order to answer questions about how the Egyptian pyramids were constructed. A video of his experiments showed the pulley in action using a 1½ inch rope to pull a 5,000 lb. weight at a 52 degree incline. His next project will be to look for artefactual remains that resemble his pulley system in an ancient Egyptian context. Both papers generated considerable discussion.

The final paper for the session was given by Martin Smith who introduced us to ballistic plastic and how it could be used to emulate human bone for experimentation. The substance is normally used for training orthopaedic surgeons, but it is also used for ballistic tests. Spheres of the plastic were filled with ballistic gelatine and used as targets for black powder musket bullets and crossbow bolts. The resulting damage could then be compared to perimortem trauma and used to catalogue fracture patterns. This data could be used to identify different types of trauma including types of weapons used and the velocity with which they struck the victim. The ballistic plastic would be coming up again in some of the other sessions. It looks to be a useful resource for osteo-archaeologists.

The session ended with information about museum visits and a coffee break where groups collected around the morning's speakers to continue the conversations.

The second session began with James Stemp's presentation on his initial results of examining wear on obsidian blades that could have been used in Mayan blood-letting rituals. Using a laser scanning confocal microscope, he found that the structure of the obsidian and the direction of use are crucial details to be considered for interpreting wear.

My presentation followed. For this I presented some of the experiments I performed using replica Late Bronze Age hammers and comparing the wear to the original artefacts. The types of damage seen on both replicas and original tools could indicate how the hammers were used and maintained.

Ballistic plastic was featured again in the final presentation of the session given by Meaghan Dyer. This time the synthetic skulls were given a good bashing with a replica of the Thames beater. The beater was assumed to have been for flax production, but its weight and design seemed to be more in keeping with a Neolithic weapon. The linear fractures produced by striking the skull with the pommel of the beater could lead to reinterpretation of some trauma seen in archaeological specimens, from that of a possible fall or accidental trauma to that of injuries resulting from a strike from a club.

After the session we retired to Merton College Hall. We entered the hall through an ancient oak door covered in medieval wrought ironwork, a treat for the metallurgists among us. We were given a splendid lunch of baked fish, potatoes and ratatouille, along with various seafood salads. The dark oak panelled walls, stained glass and portraits of former college members provided an ideal backdrop for both the meal and conversations about archaeology.

The schedule was pleasantly relaxed and we had time to enjoy our meal before returning to the meeting rooms where we would have an afternoon of workshops and demonstrations. I brought along some of my hammers so that others could see more closely the types of damage they sustained and also have a feel for the weight and balance of the tools. I had some good discussions about different ways to haft them and other possible experiments to do.

Meanwhile Martin Eren demonstrated flint knapping, and James Russell displayed a model of how his Neolithic measuring system worked. Rachel Hopkins had a large display of medieval and prehistoric shoes, including equipment for making them, while another group spun wool nearby.

In another room Christophe Snoeck and Francisca Santana collected samples of hair and fingernails to demonstrate how stable isotopes are used to identify where people lived and

what their diet consisted of. I was amused as I pared a nail and put it into a container, thinking how similar this was to the contents of medieval witch bottles!

Attendees also had the chance to go on tours of the college libraries and examine some of the rare volumes there.

The workshops continued on through the coffee break until it was time for the final session of the day. Elise Moreno started with her experiments with drilling stone vases, replicating ancient work from the Eastern Mediterranean, Egypt and the Levant. She showed several examples that had been drilled with coring tools such as reeds with oil or water lubricants and sand/graphite abrasives. Globular vases were hollowed using flints shaped specially to form the interiors.

The second paper was more theoretical. Enora Gandon spoke about how motor skills vary from one culture to another. By cataloguing the hand positions of potters in India and France, she was able to quantify the processes for throwing pots and identify cultural differences in the methods they used. The final paper also examined pottery, however Amber Hood explained MET (Minimum Extraction Techniques) for analysing pottery with optically stimulated luminescence. The technique is used for dating ceramic material by taking a small core with a 1.5 mm drill. The sampling can be done in the museum, thus mitigating the problems of transporting samples to labs in other countries.

After the session we retired to the main room for the wine reception and poster session. This was a great time to meet people and have further conversations about the papers presented. The posters presented a wide variety of experimental subjects including making Neolithic stone beads (Emma Baysal) and carving and polishing rock crystal vases (Elise Moreno). Experimental tools were also well represented, including work with antler hammers and adzes (Justyna Ortowska and Grzegorz Osipowicz), Sicilian Early Bronze age axes (Claudia Speciale, Kati Caruso, Cladio Cavazzuti, Francesca Grillo, Luca Pellegrini, and Frederico Scacchetti) and wear analysis on Mesolithic stone knives from Poland (Grzegorz Osipowicz). Another poster explored experimental work to determine if structures were roofed or left open (Rowena Y Banerjea, Martin Bell, and Wendy Matthews). An ambitious series of experiments presented by Ryan Watts of the Prometheus Project at Butser Ancient Farm explained how experimental log boats were hollowed using fire and replica tools.

After the session was over we retired to the pub where lively conversation continued and ideas were exchanged. There are times when this can be the most productive time of a conference and the events of the day fuelled interesting debate and ideas for new projects.

The next morning the conference was moved to the Research Laboratory for Archaeology and History of Art on the north side of Oxford. The papers began with Brendan O'Neill of UCD giving an examination of how felsite could have been used for the manufacture of Neolithic

stone tools. The theme of stone tools continued with Metin Eren's presentation on Lower Palaeolithic use of quartz at Olduvai Gorge and how the choice of materials was instrumental in the manufacture of bipolar tools. The final paper of the session moved to metal where Adrian Wrona spoke about using pottery kilns for cementation processes to produce steel.

After a coffee break, the conference attendees had the choice of tours of the Ashmolean Museum, the Pitt Rivers Museum, or to attend a series of workshops.

Rachel Hopkins gave us an introduction to making Neolithic bark containers, explaining how bark is harvested and the different types that can be used. We were given printouts explaining the process, and had the opportunity to practice with paper and raffia. The session was inspiring and I'm looking forward to harvesting some bark in the spring to make some containers for myself.

The next workshop took us outdoors where Elise Moreno demonstrated drilling holes in rock with various drills. A large piece of soft rock resembling alabaster was set into the ground and we all had the opportunity to have a go at using a bone drill tipped with a tubular copper core bit. That was difficult, but the Egyptian counter-balanced drills made from bent branches proved to be much easier. The first type had two rocks in small bags that swung around the top of the branch, while the tubular bit easily drilled a core into the stone. A similar drill had a large rock mounted near the top that provided the counterbalance. This one was tipped with a robust flint drill bit that could have been used to hollow out larger vases.

Finally we were given a tour of the laboratories at Oxford and introduced to the machines that were used to analyse the samples we provided yesterday. Christophe Snoeck and Francisca Santana Sagredo explained how the isotopic analysis of our samples provided information about our diets and how they could have changed over time, in addition to identifying regional diet preferences. Currently they were analysing plant samples from various areas to provide a standard with which to compare archaeological isotope samples taken from bone. Our results proved to be mostly as expected with some very odd outliers. The vegetarians were easily spotted. My sample was a little off from the main, possibly because for the past several days I had a fairly steady diet of cheese and crackers, due to having a busy schedule and a very good cheese shop in my neighbourhood. However, a couple of outliers indicated that there were possible aliens in our midst. One appeared to be more of a silica based life form, while the other who listed a diet consisting of "cake" defied explanation. There was a possibility of contamination of the samples, but more experimentation might be necessary!

After the workshops and tours were concluded, attendees were reassembled for a very nice catered lunch in the building. While it wasn't as elegant as the previous day, there was a wide variety of sandwiches, rolls, fruits, vegetables, cheeses and desserts.

The final session began with a paper given by David Altoft who has been conducting residue analysis on Jomon pottery from 9,500-14,000 BC. The experimental component involved cooking in replica pots to create a residue database to compare to residue found in ancient pottery. The theme of pottery continued with Golnaz Mardi's examination of decoration processes of pottery from western Iran in the Early and Middle Chalcolithic. The session ended with Tine Schenck's experiments in manufacturing birch bark tar, possibly the oldest substance manufactured by humans.

The final session repeated the workshops and museums visits. The Research Laboratory closed at 5:30 pm, so we were advised to be back in time to retrieve anything we left there and to meet at the Lamb and Flag at 5:15 pm for final drinks and dinner. We quickly filled the back room and several people took up large tables resulting in an evening of moving from one area to another, talking and getting up-to-date on everyone's latest projects. Unfortunately the Lamb was not serving food, so the rather large party moved on to another pub that was fortunately not as full and had a good menu. The party lasted well into the night with new friendships made and contacts for future projects.

Overall I was impressed with the mix of presentations. Papers were given by a wide range of people, not all of whom were academics or professional archaeologists. The conference was welcoming and included people who were interested in archaeological experimentation. This gave a welcome opportunity for people outside the field to bring their expertise to archaeology and provide new insights to interpretation of archaeological methods.

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