

EAC12 Q&A Session 10

2021 March: 12th Experimental Archaeology Conference #EAC12, World Tour

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Good afternoon, everyone. I'm going to start off with Nicoletta: **You briefly mentioned the use of replicas in the dissemination of archaeological knowledge to the public and museums. Could you expand a bit more on this work? How do the public react and do they react differently to replicas versus real objects?**

Generally, our replicas are for a [differently-abled] public and they generally interact very much with this kind of object that generally you can't touch in a museum. And the experimental replicas allow to have a contact [which is] very direct with an object very similar to the original. So for this kind of people it's an important emotional experience.

Thank you. I really appreciate the differently-abled work that you do, encouraging interaction through the use of these replicas because they're definitely a lot more accessible. And the inclusivity, that is really admirable. Moving on to Janani: **You have some really interesting results in your dental wear analysis for Etruscans. You showed in your talk that there are differences between males and females, but what do these results mean? What kinds of foods might men and women have been eating?**

It's one of the part of this research from the sexual dimorphism and the eating habits of the population. So because of that, mainly according to the literature resources and other materials, normally their diet was based on the mixed diet, but according to this research their diet is mainly based on plant based foods. But according to this research, so mainly, women highly depend on plants compared to men. So it's the main reason behind the differences between the gender based eating habits of the population. Which means men depend [more] on a meat-based diet than women. But actually, we have to expand the research more to understand what exactly, what kind of foods, differences between the food [there are] between the male and female, why they were having the diet. So according to this research, women's [diet was] mainly based on cereals and other kinds of plants like beans, legumes, and like that. But compared to men, they had less meat in their diet. So, this is the result of the study.

We've got some questions for Monia as well: **You mentioned in your lecture, the issues of health and safety at the reconstructions. Were any changes made due to health and safety advertised as such to the general public, so that they were made aware of them? And what was the reaction to these additions of visitors? [question repeat]**

No, the public isn't aware of, well, a part of these additions, especially the most hidden ones because it's a part of our purpose to not change the view of these two structures for the public, so they are hidden in some ways. Apart from, for example, fire fighting equipment or something like that, these are visible, but for example, the different ways we use steel to reinforce the poles, this aspect is hidden to the public.

So would you say that the integration of modern features was not too difficult because most of them would have been hidden from public view? (Monia)

Yes. Well, we explained to the public that the two structures are made with the perishable materials. So they need maintenance and have a short life, but we try to hide the modern materials.

Thank you. We'll ask Andrea a question as well: **You mentioned differences in colors in the first experiment and variations in taste based on containers, but did you also see any pattern between**

taste and color?

Yes, in the first experiment when we used wheat as a filter, the liquid turned out very greenish and with an earthy taste. That's the big difference. And yes, it's related the color and the taste. On the other side, when we used the wood containers, the color was more brownish and the taste was more characterized by tannins.

Oh, so like a slightly, maybe bitter taste?

Yeah, no different tastes, but fun fact, when we presented our results in some artisanal beer festival in the expo, the funniest comment of a lady, because we were offering to the public to try test and share their ideas, was that the old lady said it's like to drink a leg of a table. And this... the strong taste of tannins covered totally the acid, the sour that characterized the [...] for example, the third experiment straight when we opened the containers. Of course, in the first and second one the acidity came along in a couple of hours, three, four hours.

Oh, okay. Thank you. That's a really interesting way to describe the taste. That's quite funny. We've got another question for Cristiana about the music and museums project: **So it sounds fascinating and the music in your video was amazing. Could you elaborate a little bit on the project and what would you want to explain to other people watching this about it?**

This was an experiment which was issued by a Master's degree thesis. And we started from the archaeological question which was about the function of a strange vase which is called chestnut vase and was found in a burial in a Copper Age necropolis found here in Rome, mainly. And so, we thought that it could be possible to reconstruct this vase as a musical instrument. And so we tried two options. One was a kind of lute and the other was a kind of harp. And there was this Master's degree thesis that students tried to reconstruct both instruments and both worked. And in the end, these three guys, which are three students of ours, played these instruments perfectly. And of course it was a hypothesis but an hypothesis that worked.

That's really fascinating. It's interesting that more and more work is being done to explore the tactile and interactive qualities of instruments and artefacts. So that's really interesting. Thank you. So Arianna: **The processes of trial and error for finding the most efficient multi-functional tools, I imagine, is quite lengthy. What inspired the investigation of the particular shapes used for your tools?** We found out that these kinds of tools have many different kinds of morphologies, so in bibliographical research, there you have always [tools] being connected just for one function. So we tried to figure out if these differences in morphologies may be related to different kinds of functionalities. So, we just wanted to try them even because we know that here in Italy, no one has made an experiment for this specific class of objects. So we just wanted to overcome these limits and sort out this kind of interpretation for the functionality.

Hmm. That's a really clever way of going about it. Thank you for your answer. For Sara: **As an experienced basket maker, what did Giovanni think about the needles? The experiments were successful in practice, but did he also enjoy using them and would he use similar needles in the future?** Hi, Thank you for the questions. Yes, the shape of these needles are very feasible for the [basketry activity]. And I think that it's possible that Giovanni will use these objects for the other...

I think your audio is cut up. I can just move on to Charli. **Why did you choose hazel as a handle material?**

I was looking for something that would grow straight. When you coppice hazel, it grows in rods mostly. It's not too difficult to find something that was already straight. I wanted something that I didn't have to necessarily straighten myself. Buying stuff that was of a similar diameter, I just wanted a control measure. I wanted to use the same wood so I could buy hazel and it was easy for me to

source hazel, already seasoned as well. That was an important part of the experiment. So that's why I chose hazel.

How long was each tool that you tried to use, from experience, using antler picks to dig clay? It's been noticed that after a few hours of use, the antler was so worn down that eventually it's unusable. Did you find that you had the same problem as well?

I didn't use each shovel... I only used them for a short amount of time. It was more the efficacy of the tool, not how hard-wearing it was. For a future experiment, I would like to do more of a long-term project where I can actually study the use-wear and the strain on the tool and the way that it changes the shape, and also, I would like to test it longer term to see those effects on how it's made, if the manufacturing process makes a difference of how hard-wearing the tool is.

That would be a really fascinating experiment to see the results for. **Did you find that it was because of mechanical leverage that longer tools wore away at the rope a bit more?**

Yes, I think it must be the mechanics of it, but the longer handle and the sort of lever action of that, it did cause more strain on the lashing point. And so I think, yes, that was sort of an element that made me realize that the handles were more likely to be shorter. Especially thinking about the sort of spatial limitations of flint mining shafts, and places where these tools have been found, on flint mining sites and stuff. So, I think the shorter handle is the most feasible design.

That's a very good point, actually. So we've got questions for Horst and Chiara as well: **I love the reference to not needing lawyers because of the charisma of your colleague. In general, how keen were local craftsmen and shipwrights to participate in such experimental projects?**

Lawyers, interesting question, yeah, that there should have been lawyers in the end. One believes if one has to look at how the ship turned out. The shipwrights generally are very much interested in stuff like that because it's a tradition being lost. We have noted that they used one of those traditional building plans and modern ships are not built like that. So anytime people are using one of these plans for something which is more than just a very small and normal fishing boat, it's a chance to see it again and to get other people to talk about it. And we had it not so much on the ship on Nur al-Marege. We had it much more on the ship we built for an exhibition in Belgium some years ago. But it is a general question. How keen boat builders in general, how should I say, how keen boat builders are to be boat builders? The knowledge about those very complex building plans and things having to do with it, like the form of the ship, where are the other masts placed, where do you put the rudders, how long should things be in comparison to the beam, for example, and stuff like that is still knowledge owned by or in the hands of a very small number of old people and many younger people try to claim that knowledge as theirs, without really studying it in that sense. And we had that problem while the ship was built. We didn't mention there that the whole boat building idea, the technology of boat building and sailing in that area, became boat heritage some years ago. So that gave the whole thing a better impetus again. I guess that's all that I can say. Chiara, do you have something to add?

Chiara: Just that they also have the capability, that they're very keen in the physical science, in the sense that they know how to use the tools very well, so that they use it naturally, traditional tools, not electric electric tools, and they're very able to do this kind of construction.

Horst: Perhaps I should be adding something. We are not talking about something, how should I say, some folklore. No, we are talking about boat builders who were doing this thing, at least for the last 400 years. So we have a real deep-going tradition that is very much comparable to any kind of European wooden ship building. And I've seen ships being built under proper supervision, which can compete with any yacht being built in an Italian or Dutch yard for yachts. So we are not really talking

about something, which is, how should I say yeah, folklore just, like that, no. We should be surprised that they know how to use that stuff.

Thank you. We've got questions for Elgidius and John also: **You said that Alalae taught himself and I'm curious about how he became known as master. Did he have to be reviewed by older masters or did he simply gain his reputation from experience and by word of mouth?**

(John) The use of the term master is basically something that we've attributed to him as a compliment for his skills. It's not something that he's known as. He would be referred to as zee Alalae; zee means an older man in Swahili. So, gentlemen Alalae or something like that, if you like. So, the master builder is a value judgment by the authors who observed him and worked, not just on this particular vessel, but all the other carved vessels that he's kind of mastered as well, including *mtumbwi*, and *mashua ndogo*. He makes three different kinds of a vessel, fairly common, fairly frequently. He is self-taught. I think he's pretty unusual in that respect and that reflects his own obviously particular individual talents and abilities. But also particularly his family circumstances, because he had nobody to learn from. And he describes..., we do have an article coming out on this in the International Journal of Nautical Archaeology, where he describes his kind of learning process, in the sense that he thought he'd have a go at a small *ngalawa*, sorry, a small *mtumbwi*, which is a dugout without any outriggers. He had a go at it and the way he learned was by walking down to the beach and wandering around and looking at the boats and then going back. He actually said that he started off by doing it very secretly in a quiet part of the woods because he didn't want the attention. And once he'd finished, he emerged from the woods as it were with his vessel and people liked it and somebody bought it. And from that beginning he started to develop his skills really, just entirely self-taught. I don't think that's typical. I think most people learn; sons will learn from their fathers or sometimes it's just young boys from the neighborhood come along and help out and gradually form, develop a sort of an informal apprenticeship. They don't get paid, but they learn one skill after another, after another, until they've gradually acquired the set of the suite of skills which are required to build a boat. And then they sort of achieve independence if you like.

It sounds like he was quite a mysterious figure in that regard, how unconventional his learning background was. Thank you very much. So Andrea asked for Monia: **Did you organize the living history event in your open-air museum?**

No, not really living history events. We organize re-enactment days in which the archaeologists put themselves in the shoes of the inhabitants and they live in the village with different activities, like craft activities and also domestic ones. So like bronze casting, pottery, etc. So one time in a year and sometimes two, but it's not really an event.

Thank you very much. Also for Monia again: **I loved your little illustrations. Were they based on historical sources or were they created by your team from imagination?**

The buildings? No, they are based on the archaeological excavation of the site that is near the reconstruction of the open-air museum so they are archeological. There is a part of interpretation, but it's normal, I think. So they are based on the archaeological data.

Thank you very much. Another question for Andrea: **You gave us some teasers about experiments that you were just about to start. Perhaps you can elaborate on some of the initial results?**

The big problem now with the pandemic is to find the other guys in the group. So we're trying to develop some experiments just at home. One of them is starting fermentation. So we are using a little dolium or a little amphora, two litres capacity more or less. And we are using different fruits: grapes, apples and others. We just measured them and put them in the dolium and then covered them with gut until it started to rise up as a balloon. And then we verify what is going on. We tried once to start to make beer, but it didn't work properly, even if some kind of fermentation was started, it was not

enough to transform the beverage. The experiment is something close to beer or something, close to something drinkable. And on the other side we use the same yeast to produce bread and it worked. It's a bit out of our interest in beverages, but we wanted to use everything that we produced to do an experiment. The problem, as I said, is that we have 90% of our materials in a Lombardi. But we have people in our group that are from another region or another district. And I actually live in Portugal. So it's been around 15 months since I could go back to Italy. And so it's a bit hard to take care of the coordination of the experiment, but slowly we are working on that. And as I said in the presentation, we have to cut the project [short]; we planned two years instead of four years. Also for economic reason, we have a small association and we can't..., just the fact that we have to buy everything again, it's hundreds or thousands of Euro because in the first lockdown, our storage was..., we could not reach the storage and all the equipment got moldy, got too dry, started to crack and things like that. Maybe we will be able to clean the dolium and use it again, but we are not sure because we don't want something that we can't see... what there is inside could affect the results.

Thank you for answering. I really hope after COVID everyone is able to go back to their research. It sounds like it would be really, really, interesting to find what the results for your next research will be. (Andrea) Yes, and as I said, usually when we start to do experiments, the first step is to do experiments also with modern techniques and technologies. And now we are going to go back to the production of grog that we did four years ago, the first time, the first experiment. We wanted to start the production with ancient technologies, but for now we want to concentrate more on this aspect of fermentation. And also we are curious to have... to taste it at the end and then in future do it in the proper way and do a comparison between the results of the modern production and the, let's say, ancient production. Thank you.

Thank you. So Cecilia: Another question for you: **In some universities, the ability for students to do use-wear in different materials is sometimes limited by the experience of the lecturers and professors associated with the lab. How do you account for this issue in your own labs?**

Cristina Lemorini, who is not here at the moment, she teaches experimental archaeology. Of course her main expertise is on lithic tools, and also osseous tools as well, but she has a very large set of experiments and experience now also about other materials, so pottery, and as you can see from our musical instrument, also other kinds of material. And she collaborates with other colleagues also on historical sites, so classical, Etruscan, not only prehistoric sites. The laboratory of Cristina, [...] it's difficult acronym, but is a very experienced laboratory. So I think Christina has such a large experience on different contexts and sites and materials that we can say it is a very important and experienced laboratory and a teacher as well.

I'm sure the students at the university of Rome are very lucky to have you both.

(Cecilia) And also, there is a large, large set of experimental tools that constitute the base of comparison for archaeological tools. So, this is a big value of this laboratory.

Thank you very much. Another question for Sara: **Besides basketry, do you think that the needles could be used for nalbinding?**

I think that it's possible because the shape of these needles [may be suitable] for these techniques.

Are you doing an experiment with this technique in the future?

In the future, yes, I'll try it.

Did you find as well that the wider end of the needle gave any added benefit in use, perhaps ease of handling, and would the shape have been particularly chosen or created for this task?

Yes, the shape of wider needles is optimal for the grip. And I cannot exclude that it was made for this

specific use because it resembles the modern ones. And this shape is not feasible for any leather work. So I think that it is perfect for basketry.

Thank you very much. Another question for Charli: **It was overall a really interesting and inspiring experiment actually. I'm really interested to know if you needed specific experience in how to handle the different shovels and what sort of difficulties you encountered during the production phase, maybe any that you weren't expecting?**

I work as a field archaeologist in the UK, so I dig on a daily basis. So, handling the shovels would just come from my daily experience and work and the people that help me test the shovels also had a background with excavation, so they were comfortable using digging implements. The production wasn't too difficult in the actual manufacturing, because I was going for quite a simplistic design, sort of relying on the shovel shape of the scapula themselves and just trying to follow the most linear route to an effective implement, obviously just as a starting point. In the future, maybe a different haft and different binding combinations or shapes might be implemented to test their efficacy. But problems I had producing them was actually sourcing the materials. I found it difficult to get unaltered scapulae. I had to order them from Germany and they came with dehydrated flesh still on them. So I wanted to remove the flesh so that I could properly look at how the bones are marked and affected through use. So I had to rehydrate the flesh and remove it, but I had to do it in a short timeframe so that the bones weren't water damaged. So that was an unforeseen circumstance.

I can imagine. I suppose, when you went into it, you weren't expecting that you had to rehydrate flesh?

I had really good people to help me do that. It wasn't pleasant.

Which one is your favorite?

So, this one wasn't in my presentation, but I did make a shovel based on an artifact found in a flint mining archaeological site in the South of England. That was actually, the neck of the scapula was socketed and it had an antler handle. So that was interesting. I wanted to try and replicate that just to see how that would hold up against those with a wooden handle and where the haft was attached just by having two platforms pressed together rather than the haft socketed within the bone itself. And that one was special. I liked that one because it was useful and it also reflects how you might be able to make a similar implement if you were in an environment that you wouldn't necessarily have wood resources. So it's sort of thinking about different places in the UK where vegetation isn't as ample in supply and things like that really. So that one was special.

Thank you so much. Another question for John: **Do you know if Alalae's boat designs changed over time based on feedback from customers or his own experience?**

He did say a little bit about that and I think the answer is yes. For example, on the particular *ngalawa* that he built for us, you'll see at the front that it has a kind of a tongue shaped prow, and that's quite difficult to execute. And in his first attempt at an *ngalawa*, he didn't do that. He just did a kind of what you might imagine to be a typical boat front, just a pointed front without any kind of upturned lip or anything like that. The first one he attempted was a much more basic version and he kind of built his skills bit by bit. He also built another type of vessel, which, to all intents and purposes looks like a plank-built boat from far away. It's got a [trans...] stern and everything about it looks like a plank-built boat from a distance. And then you get closer and that's something that, again, he just saw some that people were building elsewhere. He had a go at it. People liked it. He often talked about the response that he got. I mean he is a fisherman, but he's also a builder. He does both of these things and he builds to sell. So obviously he's watching his market all of the time in that respect. And of course they make adaptations, for example, like adding a little timber at the stern of the vessel that you can add an outboard motor to, for example, because outboard motors, they're

still not very common, but they do turn up every once in a while and somebody wants one. So yes, he's very, very responsive to what the community around him needs. And, you know, as I say, he is a fisherman and he uses an *ngalawa* almost every day of his life, when he's not building anyway. So, in some ways, he is his own feedback as well as having his sort of colleagues and the fishing community around him who are also looking for good quality boats.

Thank you. **You briefly mentioned as well in your lecture outreach activities. Could you elaborate on these and how you're expanding information to members of the general public?**

Yes, so actually this boat-building project, the building of the *ngalawa*, took place within a much bigger project that was more about outreach and, how to kind of leverage the maritime heritage, the living maritime heritage of the people of Bagamoyo for social benefit. And we came across the opportunity to build the *ngalawa* as part of that. What we did with it was we held a large exhibition. There's a heritage building called the Boma in the middle of Bagamoyo that used to be the colonial headquarters of the German and British authorities during the respective colonial periods and we used that building to house an exhibition that was visited by hundreds of school children, by the local community and by random chance, also by about 15 or 16 labor and youth ministers of the countries of the Southern African Development Community (SADC) which was very, very happy because then it meant we were not just reaching the community, but also kind of policy makers and thinkers and things as well. We also continued that process at the University Of Dar Es Salaam in December with a repetition of that exhibition. We also produced a documentary film of about 45 minutes of the building of the *ngalawa*, which had its premiere in Swahili in December. And we also have a really cool music video made by Tanzanian rappers, called 'Bahari Yetu Urithi Wetu', which is the name of our project and also the name of the song, which was really good fun, and it's there on YouTube. You can look it up and it encourages people to value their maritime heritage and the environment, etc. So, the presentation that we gave was very much, for this conference was very much about the craft and the learning, but the wider project was much more about outreach and the way that I hope I've just outlined.

That sounds really lovely. I'd be really interested in watching that rap video. Thank you very much.

Another question for Monia: **Have you considered having people living in the houses for a longer term experiment?** No, when we were students, we had this idea but no because we have some problems living in the houses and now they are just for the purpose of dissemination... and the answer is no.

I suppose it might be difficult to get volunteers for a project like that?

No, sometimes some visitors ask us if it is possible. But for us, the two houses are really a museum because there are a lot of objects inside. So they are not really adapted to such an experience.

Thank you very much. And for Andrea, again: **It's lovely to hear all the processes of beer-making including the making of malt. Will you be making your own malt again?** Yes, we will do it again. And our main goal is to have the chance to start from zero and cultivate the cereals themselves. The big problem is that we have no space to do that. We would need a very big field to do that and we can't. That's why it would be lovely to find some partners here to have this chance to develop also this part of the process. But yes, we will work on our malt for sure. Thank you.

Thank you very much. Another question for Janani: **In other research it's been found that differences in microwear analysis are often results of occupational pathologies. Like differences in production techniques, using the mouth like a [vise], for example. Could any of the gender-based differences that you noticed in microwear and macrowear analysis be attributed to a sexual division of labor in Etruscan in populations, or would that just be an implication of their diet?**

Thank you for the question. So I think according to these two directions, there is some kind of

difference between male and female. So I have talked about this in my presentation, but we are not really sure which kind of practice they did during that time period, but there are some differences between the male and females, which can assume that they have some kind of different non-masticatory behaviors. But for now it's difficult to say, but according to some material cultures, the Etruscans have practiced some gender based cultural practices. For example, young aristocratic female... individuals, they had some gold bridges in their teeth. So it means like they have specifically gender-based cultural practices during the time of the Etruscan period. So, we can assume that there were some kinds of non-masticatory behaviors practiced according to the gender differences. I hope it's clear.

Thank you very much. And then maybe one more question for [Charli](#): **So what do you think of the possible use of a scapula as a malt shovel used for turning the germinating grain on a malting floor? I ask because a bovine scapula was found in the Bronze Age cist at Achavanich and it was worn down on one side, not really evenly, and in a similar way to wooden malt shovels.**

Oh, that's really interesting. I don't know who asked the question, but if they could send the case study or a link to the information, I'd be really interested. I think that, yeah, it seems possible that it could be used for a different purpose, for a malt shovel, that sounds feasible. The scapula is such a versatile bone that so many different things it seems to have been used for in the past: for oars, for softening hides, things like this. I think that seems pretty feasible, but yeah, I'd be really interested to hear more about that specific Bronze Age site. That'd be very interesting if whoever asked the question could post a link or something. Thank you.

Thank you so much for everyone's contributions.