

# EAC12 Q&A Session 11

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

<https://exarc.net/meetings/eac12> | <https://www.youtube.com/c/ExarcNetofficial>

So, hello and welcome to this evening or this morning or this afternoon session. This is Session 11.

So without further ado, our first question is for the paper by Pedro Cura, and this is:

**Did the the original plates have any wear marks that would indicate the type of weaving they were used for? (e.g. tablet weaving tends to wear the cards diagonally towards the middle)**

Yes, they have... some of the plates, not all of them, but some of them, they have the marks of the strings [passing] in the walls. But all of them, they are quite vertical marks and they are in opposite directions, if I make myself understood. So if I understood the question...that they have the marks, yes, of the strings in the plates.

Oh great. **And they can give you clues as to what kind of weaving it was used for...**

Yes, well, the marks they can appear if they are horizontal or vertical, but to what we can say at the marks they also can appear because the string is very [strong] when we are making... using the loom, but, [does] not indicate a proper direction because all of them are mostly square. So mainly they have the direction for...well you can see it...I explain you better. You see the drawings, that is, the drawing of the [heart] that is in print on the plate, you can see that she's straight, but you can't guess if it's upside down or in the right position. But usually the marks of the strings, they are there just in one direction.

Oh, great. Thank you. Our next question is for Kate.

**So how might you imagine these engagement activities to work in practice in order to encourage visitors to deepen their thinking about the museum? Can a museum run similar programming repeatedly throughout the day, or with groups who aren't committed to participating start to finish?**

Thanks for the question. So I've imagined this working in many different ways. I think that it could be anything from a permanent part of an exhibit or a structure, to something really temporary or even sort of a presentation done by museum personnel. So I think I can envision scenarios that sort of run that gamut. If it is something that's done live, so it's just, you know, the 10 minutes when that guide or museum personnel is standing there, then I think that's a time when it's really..., there could be lots of questioning and sort of helping visitors, deepen their thinking by asking them questions that get them thinking critically. And that's sort of a good time to be able to help draw a lot of..., make a lot of connections with visitors. Then sort of moving towards a longer scale, a thing I can imagine in a structure having maybe permanent signage, maybe, sort of a display of objects, that have labels that have whatever the information is you're trying to get across. That's a more permanent way for people to just..., for visitors to filter through throughout the day and engage as much or as little as they'd like. One thing that I was hoping to do before COVID, with my dissertation experiment, was to actually, be set up in a structure and have.... represent, well, have objects or different furnishings, that kind of thing, that had tags on with the information, their provenance and all of that information, and have groups just come through and actually physically stage the buildings so that they were making those decisions while handling the actual objects or replicas. And that's something that I think people could engage with for a few seconds. People could watch because there are the visitors who just want to watch, or they could actually, you know, get involved and do something, quite a bit more extended. There are also longer-term projects. I know a lot of museums do this by running longer-term projects with volunteers and visitors that actually go for multiple sessions or multiple

weeks, which would be sort of more geared at the local community. And those are really effective because you can just get to a really deep level, with those then, more so than just someone walking through for five minutes. So again, I do..., I can envision it working many ways. I think the longer visitors engage, of course, the more meaning it can have, but there are certainly ways to get just sort of a snapshot, even if someone's just passing through.

Oh, thank you. That was really comprehensive, I enjoyed listening to that.

**So you mentioned that, with COVID had stopped what you were originally planning to do, do you think you will do any of the stuff that you were originally..., like with the city and the roundhouses you said.** This is just a question from me.

Yeah. I would love to, I, it's sort of a matter of time before things get back to normal, I think, and then finding an open-air museum that will have me, but yeah, I would love to, because I think, while I was pleased with what I was able to do virtually, it certainly was a different experiment than the one I had originally planned. So I would love to, we'd love to see how it functions in person, because I think there's so much more dimension to that.

That sounds great. I hope you get to do it. Our next question is for [Angie](#).

**So do you believe that the gabbroic clay was transported from the Lizard to other places? Is there any evidence for clay trading during this time?**

No, there's no evidence for clay trading or even pottery trading as such, you know, hand-to-hand exchange. It's all done through like comparative analogies, like with axe trading and the sherds just occur all over the Southwest of the fine gabbro bowls, which is similar to the Hembury Bowl. On the trading of prestigious subjects has been constructed through that theory. That's what was happening in the Neolithic, but there's absolutely no evidence for the clay being traded in the Neolithic. However, I did put a photo in of an Iron Age vessel where the clay was actually stored in a gabbro pot at Boden Fogou. That is the only evidence we have in prehistory of production processes involved with the clay. And it is quite interesting, depending..., in the light of what we found out recently about gabbro clay in developing its plasticity.

Thank you. This one's sort of a follow-up, but it's more about your own research and it's:

**I'm attempting to recreate some Cornish urn shaped vessels from Cornish gabbro clay as part of my thesis. Could you possibly be more specific about the areas from which you source your clay from please and was it difficult to source?**

Well for the filming, we had to gain permission from Natural England. If you read Lucy Harrod's 2004 paper, she's very specific about sites where she dug out the clays, cause she tested clays archeometrically against the pottery. And she is very specific about the locations. The gabbro outcrop is only seven square miles. So you can put a pin in there and go and dig some clay but you do have to be careful. Sometimes you have to get permission. There are areas where you can go and dig it out, on beaches that aren't protected as such, but you do have to be... it's best to get permission to dig it out.

Next question is for [Theresa](#).

**Would you expect the moulds in the bladders to cause health problems in people drinking from them?**

Thank you so much for the question and that is actually, it's a good question. So, for the four weeks that we drank from them, no one had any trouble with it. And as long as you were drawing them out, once in a while, between their uses, then the mould for the most part would go away. And so I think with proper maintenance that the bladders in the containers would be perfectly healthy to drink from, for a given amount of time. For the rawhide and the fat-tanned ones, I'd say we probably would have had another couple of weeks of use before I looked at them and thought, perhaps that's not

something I want to put in my mouth any longer. But the vegetable-tanned ones, I think probably with proper maintenance, like I said, would last quite a bit longer.

Presumably, bladders are something that is fairly easy to access. **So if it did become a problem, they could get a new one? I don't know.**

As long as you were being successful in your hunting, then yes, they would certainly be a resource which would be renewable, yeah, where you could just get a new one and move on from there.

That sounds great. Thank you. Our next question is for [Felix](#).

**What are your plans for future work with understanding firing technology? What would you do differently if you could run this experiment again?**

Hi everyone. For sure I'll do it again. It was..., there are some things to do differently and of course I'd like to in the future to test some other types or varieties of such kilns, because there are different ones in this Cucuteni Trypillian culture. And for this specific kiln, which I used in my experiment, I would like to try it again with a different fuel because the fuel was not so proper..., it was not dry enough.

Thank you. Our next question is for [Linda](#).

**How did you make the tin studs for the bracelet?**

Okay, so this work, the work with the tin studs was done by a silversmith Jamie Inglis, who is on the slides if you go back and look. He was working with a rod and then hammering it into shape and then working down, those little sort of slightly wasted dumbbells and then working them out so that they could then be cut off. Then he had to try and grip them in some way to do the hammering on the top, once the final bit had been removed. So essentially it was a little bit like you work your way down a rod, making the cuts about where you're going to have the divisions of each stud and then you have to chisel out and hammer out the waste section and then hammer across the top. But they were really fiddly, really fiddly. And so it was one of those where..., as I say, we met at the opening of one of the events and we just looked at the thing in the case and we just kind of looked at each other, said, hmm, okay, they were really, really skilled and we have not matched that skill and we have not done it justice yet, but we will try again. And so he came back with those much, much smaller studs, which were used in the second version.

They did look really fiddly.

The other thing is that the hair that you're weaving is really quite springy and wiry. And so you're inserting the studs as you go along, although you could also do it in other ways, there were several things that we tried, but the first attempt, which was captured by the BBC documentary basically has them pinging off all over the room. And luckily we didn't lose one because there were an awful lot of places where you could have lost something so small.

So it sounds kind of frustrating at the start...

It was and until you got a rhythm going, it's also hard if you're being filmed, doing something to keep the rhythm and to keep your concentration. But once we worked out a system, it went a bit smoother.

Thank you. Our next question is for Caroline, and says:

**How do you tie the weights to the warp threads? Is there a pattern like there is for the heddlings? I**

guess there is sort of a pattern, but not as rigid the pattern as there is for the heddlings, but you need to make sure that the warp threads don't cross when you're attaching the weights. So you need to make sure that you have the warp threads that go straight down..., they shouldn't cross and be attached on different weights because that would or that could mess up your weaving pattern and in

the work threads. I have attached them just by one of these loop knots and I had a string going into the weight and then I had a loop with a bunch of warp threads. I used approximately 15 grams per thread. And since this was two-ply warp threads, I used about 30 grams of weight for one warp thread. It was a very approximate weight because the weights were already made. So, when I was in error, I opted for a heavier rather than lighter.

Thank you. We actually have a bit of a follow up question to that which flows on quite nicely somebody's asking:

**Was this a new method of warping for you or did you have experience of it before?**

This particular one, for the actual weave, I had tried the warping method, but not weaving with this kind of warping method. So it was like a two-part experiment. So firstly, me and a friend, Sophie, were trying to find out how we got that pattern in the preserved border, which unfortunately I didn't get a hold of a photograph to show you, because it was in a book that we... we found a picture in a book, so I couldn't really due to copyright show you, but it was this same part in the setup threads that we were like..., how did they do that? So it was a semi-new warping process.

Thank you. Our next question is for Rauf.

**In the video, there were lots of reenactments of festivals and events, as well as the archaeological objects. What kind of archaeological evidence do you have for these kinds of activities?**

Up until now there was no such a thing as reenactment or experimental archaeology in Cyprus. Cyprus, being in a very important location during the Bronze Age motivated us to start working on a project like Vounous to construct and re-enact a village where it was supposed to be, but the actual idea was to recreate those stolen artefacts on that location where it is because they were all stolen and taken abroad, out of Cyprus. Due to these facts, the new coming generations had no idea about the importance of the place they're living in right now. Having in mind that all these artefacts were stolen and were taken out of Cyprus, we have reproduced the replicas of all these artefacts. To sum it up, this is all we can say about Vounous.

Thank you very much. **And do you have much evidence for the festivals themselves rather than the particular archaeological, individual artefacts, if that makes sense?**

I have spent 20 years of my life researching this. With the help of technology like internet, and by traveling around the museums, I have found out the evidence that most of the artefacts were from Vounous, the ones that were showcased at these museums. What makes Vounous actually very important at the same time, is that how they went on with their daily lives, even with producing, baking bread or with designing the irrigation and how they conducted their rituals. They actually put them on these artefacts as a message for us. And it is one of our main objectives and projects to turn this whole place, Vounous, into an open-air museum with all these facts. And while we proceed with the project, we would be more than happy to receive help and knowledge from EXARC. One more thing that makes Vounous exceptional is the clay cups, clay pottery. It is the way they made them is actually... the clay they used is actually much more thinner compared to the other locations. And [they're sturdy] at the same time. With our research, that we did around that location, we have found out that they have actually used a clay that came down from the mountain with water and then we put forward a theory on that too at the same time. And we have produced all these replicas with everything that we acquired from there locally with ancient techniques.

Thank you. Our next question is for [Pedro](#), again.

**What was the weight and size approximately of each plate and what fiber were you weaving with and did any iconography help you with your weaving?**

Thanks for the question first. And, yes, the weights, they almost of them, they have between 100 to 200 grams, the weight of the plates. We have some clues that maybe the drawings that are in the engravings that are in the plates, we can use it like a code. So to be like they're using in the medieval

times, with the cards, with the bone cards or with the skin cards that you also is a technique of weaving, that you have some kind of codes to build a pattern what you are weaving. So we think that maybe the iconographic can be used for that. Also one of the problems is that we have at least 500 plates, I think, and there are few engravings that repeat himself? So this also can be a sign that they can use it like a code. So when you are turning the ceramic plates with different colors, string imagined, so you can use it like the match, or you can use it also the iconographic in the plates like for you don't get lost, which side you have turned because the iconographic it's in both sides of the plates. And they are different. So they are not the same in the the same plate. So one side has a kind of iconograph and the other side, they have another one. So also can be a sign that when you are turning, you have to turn in the same direction. So if you turn to the right, when you go to pass the string, to make the weaving, you have to turn it in the opposite direction. So you cannot turn the plates always in the same direction. Otherwise it doesn't go well. So to... for finish [the hands also too], it can be used to make patterns, but we didn't study it yet very well that part, or it's like a sign when you are turning, you are using the part of the technique of turning the plates or rotating the plates for you. Don't get lost in... not turn in the same direction.

Next question is for Kate. So the person who's asking her said:

**Lovely project, I like the engagement and empowering aspect of it. What I've noticed on a long-term project is that it attracted predominantly retired or affluent people or folks working on-off block shifts or part-time, with much more limited opportunity for people working full time, or having full time care commitments. Maybe short term initiatives with on-site/online contribution or input are the way to go. How can we engage broader ethnic diversity? We get amazing input from ethnically diverse visitors. Unfortunately our self-selected team of volunteers does not represent the ethnic diversity of the local population (at least partially due to economic constraints). Any ideas?**

Yeah, thanks for the question. I agree. I think this is one of the, number one issues with all of this. And one of the things I had put at the end of my dissertation was that, in looking back through my data, which I had recruited mainly through personal connections and, you know, organization, social media pages and that kind of thing, it was mainly white middle-class, highly educated people who responded. So, so that was kind of, you know, I, I managed to capture the problem in my own data. So I think that this is something that really needs to be the focus going forward because of course those are sort of the communities we are trying to reach and the whole point of doing this. So I think any project needs to be designed, starting with the needs of communities we're trying to reach at, you know, at the, at the heart. So things that I've thought about these are not things I've been able to test out yet, but just in..., I work in education as a teacher, so, ways I have have reached communities of people and families that are difficult to reach in the past because of scheduling and things like that, I think that the digital aspect, it could be really helpful and that's a place where, although of course, a digital roundhouse is not nothing like the experience of being in a real round house, I think that it could be an opportunity to have people who otherwise, because of time constraints and, you know, work schedules and that kind of thing, and travel, and costs that kind of thing couldn't be involved, actually involved in some of these projects in ways that they can't be physically. I think in all of this, it's going to be really important to be doing some..., being guided by community members and community stakeholders. So, I would think the first stage in designing any kind of a project of this type would be finding individuals in the community who are part of organizations, for example, if you're trying to reach people living in poverty, you could, you could come up with a whole set of contacts of people who would be really involved in that community, have lots of contacts and sort of bring them in as part of a panel to focus on getting your target audience, if you will, more engaged and then just start designing around that. I think another thing is that we have to look particularly, particularly for race and economic disparities and issues. We need to look at how our institutions can

be unintentionally unwelcoming, although I think very few of us would want to think that our institutions, our museums, or projects are turning people away based on the color of their skin or their background or their income. I think that those things... there's institutionalized racism and institutionalized sort of culturism, if you will, to make up a word that really is reflected and as the people behind some of the organizations, we might not see that. So I think being really reflective of how our organization comes across and how we are interacting with those groups is very important. So, again, I'm afraid I don't have answers. But what I would say is that would be for me, if I were to design a project with the museum, my first step would be to decide who are my target groups and who, which sort of important figures in the community who have these ties. Can I interact with organizations, charities, anything like that? Can I interact with, to bring in a broader swath and that would be a place where for me personally, I would need to say, I don't know the answer. So I need to find these people who can connect me with people who do know, who do know what it will take to bring in a more diverse public. But I appreciate you asking the question because I think it's the exact, it's sort of the heart of the whole thing is... we can have these great ideas but unless we're really putting in the work to make it accessible, that's a really big problem. So, so again, sorry to not have any answers, but, just to say, I think, I think it's definitely the right question to be asking.

Thank you for your answer, yeah, that's some really important issues. Our next question is for Angie: Somebody is asking: **where can we find further details about your pottery firing weekends?** Well, I tend to advertise them on social networking, on Facebook pages on archaeology pages. I haven't put one out recently, obviously, because they're very much communal events. So I tend to advertise on my pottery page called Pottery Classes in Plymouth. That's a Facebook page. I advertise on my Instagram page, which is [angiewickendenceramics](#). And you can always get me on Facebook. I'm just a Facebook addict, really for those reasons.

Our next question is for Teresa and it says: **you say the rawhide bladders had a smoky scent and taste in the beginning. Did you smoke the rawhide bladders or was the taste and scent due to something else?**

I did indeed smoke the rawhide bladders. It's been my experience with pretty much any sort of raw dermal tissue that smoking it just makes it last to say much longer and it's actually an anti-microbial treatment. So that was completely due to a treatment as opposed to it just tasting smokey because it was around a campfire quite a lot. Thank you. No problem.

Next question is from me for Felix, and I was just wondering, **do you know how many times your kiln could be used? Is it permanent, forever, or is there a certain amount of times?**

Well, I really have no idea because I just used it for the first time, but of course it can be used for a second time. And we'll see if it also can be used for a third time or a fourth time, I'm not sure. For sure, the dome of the kiln could be replaced, you know, where you build the upper part and in such way can be reused because the buried part it suffers no damage, it appears so. But probably the original kiln, the archaeological kiln was used for several times, so maybe mine can be used too.

Okay. Thank you. Thanks. Next question is for Linda and they're asking: **what retting method and how long do you, how long did you use it for to get those lovely, fine nettle yarns made?** (and it was a lovely presentation).

Well, thanks for the kind words and for the really good question. It is really hard to get nettles to the right state and for anybody out there that's tried retting flax, nettles are even more subtle. So the whole problem with a controlled rot, which is what a ret is, where do you stop and why there? And if the water in the controlled rot is actually helping you release the fibers, if you go too far, you will start to destroy those fibers, or they will no longer be on the stem and they'll start to do what all fibers want to do, which is detangle themselves into senseless, horrible knots. And so a large part of dealing

with fibers is to try and keep them in good order. So you want the nettle stem to still have the fibers slightly adhering to them but to be sufficiently loose and loosened from the epidermis and from each other. And those three things are not going to happen at the precise same moment in time. So the best information to take going forward is that once you've harvested your nettles, you dry them a little, you get rid of the leaves, then you lay them out on some sticks on the ground. Perhaps. If you're in the same kinds of environments that nettles normally grow in, which is temperate style climates, and you do that maybe for a couple of days, but again, it depends what kind of weather, don't let them get too dry. And you're just starting off the biological activity. And then I have taken them from there to the retting pits. And I've sometimes used something as simple as a kids paddling pool, or you saw there, I'd got some plasterers tanks in the images shown there. I've also done it in a small pit or in something like a nice log boat, submerged in a stream or a pond, that always works. And then you just have to keep an eye on them because after that it's about temperature. And once they go into the water, the temperature, which things really start to cook up and all of that biological activity is getting very active indeed, depends on sunshine and the ambient temperature. And there can be a moment in time when it's just right. And half a day to a day later, it's just gone a little bit too far. So you have to keep checking them. The motto is keep your nettles retting somewhere very close to you.

Thank you. Next question is for [Caroline](#) and it says: **your starting cord seems to be of a larger yarn than your [...] weft. Was your sample photograph showing the largest starting yarn and was it in a different color or was it to make it easier for us to see?**

Oh, yeah. Well, it was... the photograph shows that the startup threads were thicker and it even says in the description to the image. So they are thicker and they're also twisted. Is that the word? They are like two-ply but with a lot of threads in them, I don't know how to explain it but they have made starting threads thicker than the warp threads. The photograph was in black and white, so I don't know the color differences. As for the film, I took different colors to perhaps make it a little bit easier to see in the film.

Thank you. Our next question is for [Theresa](#) again and it says: **do you think veg-tanning the bladders just enough to tan the outside while leaving the center as rawhide could potentially help with both the leaking and the mold on the surface?**

Thank you. Well, it's a really good question, actually, however, bladders are incredibly thin. One of the things I did do that wasn't mentioned in the presentation, just because it was something of interest to me, is that some of them were tanned for as short as 12 hours. And actually even the long soak ones were only in for 72 hours. So they were already very, very short soaks. It's just that the tissue is so thin that it's not like tanning a skin where you end up with that [raw] striping through the middle. What would really help with the leaking? One is not splitting them, it's just unnecessary and two, they don't actually need to be softened. And that was something I kind of came away with from this particular research. Was that softening a water container is really quite a pointless amount of work and you've very much chance tearing holes or making areas where it's a bit more permeable than it would otherwise be. As when it is wet, it's flexible. And that's the only time you need it to be flexible. If you just [tie] it and let it dry hard it's not really a problem because as soon as you put water in it then it goes flexible. So honestly it was, I think in my opinion, it was the softening process that actually caused me a number of the problems that I encountered.

Thank you. Our next question is for [Angie](#) again, and it's asking: **What would you say is the biggest asset of the gabbro clay?**

Thank you for the question. I've not really worked that out yet to be honest because...previous research into... our experimental archaeological research into gabbro clay suggests that it's the thermo shock resistance of the clay. And so there's a technological interpretation... functionality

interpretation of why the clay was first used. I'm not sure that's strictly the case. Once you start using it and you start to be able to make something quite complex, like the Hembury bowl outfit, something big, you start to like to use the clay, it's not like clay, you get out of a bag, it's just not plastic at all. It's like any material, it's a very strange material. And once you start using it, you get used to it and you can make things, good things out of it, complex things. What do I like about it personally? Well, to be honest, when I first started using it, it just used to make me swear, you know, when I was making something, I just used to swear and throw it in a corner and get really frustrated with it. But then when I made the large bowl, I just enjoyed using it. But then, it's hard to say at the moment. I mean, I've got to do more tests on it. I've got to do some experiments on surface treatments of the gabbro clay, because the original [sherds] had very, very smooth surfaces with no large inclusions in it, very fine fabric. I think I really enjoy making something really like that outfit. Also, the bowl that I made broke in fire, so the thermal shock resistance is a complex concept. Anyway, it's, multi-factorialist why things break in a fire. What I do like is going out, digging out the clay, just the whole experience of digging out a material and using it to make something and complete the process and trying to reenact what a Neolithic chaîne opératoire might be. I mean, you can do that with all sorts of materials, but, sometimes I stand at Beacon Cross Copse when I'm doing a firing and imagine that I'm a Neolithic potter. So, yeah, it's not an easy material to start using, but I do like it now that I've made something fairly decent out of it, difficult plasticity issue, very challenging. And I've even tried to throw with it and it won't throw at all, even on a slow rotation, even with very small inclusions in it, even when it's plasticized, it won't throw, you cannot throw with it. There's a lot of things that I want to know about the clay. There's a lot of questions that still remain about the clay and its technical properties. And that's what I'm looking forward to and just really, really investigating it at a, quite a deep sort of ceramic level really. Yeah. That's just about it. I think.

Thank you. That was really interesting. I enjoyed the answer a lot. Our next question is for [Kate](#) and it says: **It concerns me that the materiality of the objects might be lost in virtual exhibitions. Do you have any suggestions on how to deal with that?**

Thanks for the question. Yes, I think you're exactly right, it concerns me too. There's never going to be any comparison between the actual experience of being at an open-air museum or holding an artefact or even a replica in your hands, versus seeing a picture of it or seeing it, you know, seeing it on the computer. So I don't think, I don't think there's any way to really, to compare those two experiences. That said, I think it can still be a useful tool to broaden engagement among people who wouldn't necessarily be able to experience the real thing. We already see that in archaeology and in museums where there's the actual artefact itself, which very few of us get the privilege of touching. Some of us get the privilege of, you know, being one step back and seeing it through a glass case, so that would be a few more of us, right, and then replicas are something that we see quite a lot more and we, more of us would get to interact with replicas since they're not obviously not quite as precious and then even more of us can see it when it's a photo or in a virtual sort of..., on the computer. So I think that, I think there already is that sort of progression from the actual thing to what we're all able to access. It means that, for example, in my project no one walked into a roundhouse and had an emotional experience because that is, you know, it is quite a sensory experience to be in a building like that in a structure like that. But what people did do was to engage it at an intellectual level instead of an emotional level. So obviously this means you can't do things what I was talking about my project about, being able to, you know, increase empathy and things like that. That is not, that's obviously not going to happen virtually in this scenario, but I think the intellectual level is still really useful. So for example, anyone who has read a guide book about a heritage site before going there knows that it can really increase your enjoyment of going to the real place, or seeing the real thing if you know, sort of the intellectual level, the background about the who and the why, and all of that, it can add up to the experience. So, of course it's not a replacement,



but I do think it's a way to get archaeology out to more people who maybe wouldn't be able to access it. And certainly it's useful to give the public a bit more background, a bit more of the intellectual side of things, before they get to having the real experience.

Thank you. I think Linda says that she has something to add. If you'd like to go ahead.

Yeah. Thanks Phoebe. That a really good issue, isn't it Kate? And I think the whole problem is how our brains deal with material culture. And from the time where we're babies onwards, we're trying to experience things and make sense of all of those materials around us. So we're building up those experiences, but what do you do with the unfamiliar? And so if you're trying to present information or get across something that is really quite alien to somebody's experiences up until that point, then it's a much harder job than if you have somebody who is partly there. So if you can show somebody a plant that is similar to one that they've already had some kind of interaction with personally, they can imagine themselves feeling it. And in fact, our brains are queued up to do exactly that. But if they don't know the plant world very well, if they've never experienced certain things, then that is a barrier to understanding them in the virtual world. But on the other hand, you can get around that with sort of moving images with videos a little bit. But you do have inner city kids who I have seen go to a museum and become so excited because there was a real live chicken or hen, and they had never seen one in real life before. And that's the level at which some of the things that you're trying to get across to them are not part of their scaffolded awareness and experiences. And so the virtual world can take us so far, but it's also drawing people into things that they know and making those connections that will get you to the next stage. Thanks.

Thank you. And there's a question that's slightly connected to this, addressed to you, Linda, as well, saying: **You incorporate touch into the museum exhibits through the replicas, but do you also incorporate other senses in the exhibition or are you planning to in the future?** We had a whole project looking at touch in museums and, we, I showed in the slides, the exhibition that ran for three months in 2014, we had a touchable element. What you couldn't do was get across the sense of smell and actually smell is very closely linked to taste and a lot of what you think you taste is actually about smell. So if you could get a smell you're really a long way forward. And with some of the nettles, certainly the touchable elements, I really wanted that to be part of the exhibition and then COVID came along. So those could be part of educational experiences because they can wash the cloth afterwards. But in the end, I think some of those experiences, the smell does linger. So if you smell that of that you've made, if you smell the nettles, there is really characteristic smells at different stages. And afterwards, even after you've washed it, there's almost a new mown hay kind of smell to it at times, but that will gradually fade over time, depending upon how you wash it and how often. So, yeah, I'd love to find a way of getting smell into the mix as well. That'd be great.

Yeah. I think smell is such an important sense to incorporate in terms of realizing what it was like back then I think...

Linda: ...yeah, the emotional connections you have with smells are really strong and people have published, expressing exactly that. And a particular smell can take you back to a place in time where you associate that smell. And it's quite powerful when you have that. And that's where the open-air museums really [score] the smokiness. You go into some of the houses that have been reconstructed and that's the overwhelming smell. And you don't forget that...it's the smell of home to the people who actually lived in those places.

A question for Caroline: **did you find the [basket weaver starting border] made an easy transition into the broken lozenge twill weaving?**

Yes, I guess so, it's a good question. I didn't really think about it, so yeah, I think it went quite easily

actually. I didn't think about it as being difficult or like clumsy. So I guess I found it quite easy to shift into the broken lozenge twill.

Thanks. And a question for Pedro: **in the conclusions to your talk, you said techniques used in medieval and modern times could be applied to pre-history. I think your experiment shows that. So what about tablet weaving in the Iron Age?**

Our research interpreted something - well, first thank you for the question - how it was to interpret..., to try to find which way were used the plates in the Chalcolithic. And we know that the Vikings and in the North of Europe, they used bone plates and in the medieval they have this technique of using the plates, also kind of plates. That is the image that we show. So when we find these kind of plates in ceramic, they are heavy. So it's quite difficult to interpret how to use it. But we have to try it, we have to try to, we have to approach all directions. So that was one of them that we tried to use it, to use the plates. And also like the question that someone had made earlier that using the science to create patterns, because we know that you can number the plates, the techniques that you use in modern days, you can number the plates and then use it to make some kind of patterns in the weaving. And so we think that it is important also to look to that information and transport it to the pre-history.

Thank you, that was great. Our next question is for Teresa and this one's quite long, so I will read it all out and then I will, if you need anything repeated, that's fine. I can repeat it. And so it says: **Fantastic and in depth presentation, thank you! (excellent TV series as well!) Which water container do you think, yourself, is more likely to have been used at the time? Is there one you would prefer using? I am interested in experimenting with skin / leather cooking vessels as a potential replacement to clay pots and metal cauldrons for Iron Age or earlier merchants, travellers, mobile populations in Britain, France and North Western Europe. I never considered bladders but stomachs and simple pieces of skin / leather. Would you have advice for such experiments after your work on the bladder containers?**

Thank you for the question. That is a bit of a long one and I will do my best to answer here. So, I don't know necessarily that my particular experimentation was going to be applicable to cooking vessels as that's a very different function. But the first part of that question, so let me just answer that in order. So the first part was which bladder did I actually personally like the best and honestly, it would have been the rawhide one, the one that was never really anything but the control. It was very easy to make, it held up very well. It held water the best of any of them. And, at the time period, it's probably the one that would have been being used. I think I mentioned it. I'm not sure if I mentioned it in the presentation, actually, vegetable tan is not something we see come in until quite a lot later in time. So, we have very little evidence that there would have been vegetable tanning during these early time periods. So the rawhide is definitely a better guess for the actual tannage technology, if you can call it that, processing technology being used at this particular time period for this particular application. In answer to the second part of the question, when it comes to cooking containers, yes, you can put the skin cooking container just over the fire. However, it's a lot more straightforward to heat them with hot rocks. Anything that is dermal tissue will shrink when it gets hot. It doesn't matter if you have water in it or not. It's going to shrink. So it has a limited lifespan because eventually it will shrink to the point where it doesn't really hold liquid anymore. However, you can get two, three, four different cooking... segments of cooking out of one container. But you can do the same thing in a bark container or wooden container with hot rocks, and then you have a container which will last indefinitely, really, if you take care of it, whereas it would kind of depend on what people needed at the time, but skin is actually, it's a very valuable resource. I know that ethnographically it is indeed documented if there is cooking being done in stomachs and in, so what are called paunch containers, but they're stomachs, as well as in skin containers. However, if you're only shooting a large game animal, say, once every four weeks in a small group, then that skin is actually going to probably be too

valuable to go and use in a way that would damage it, well, that would ruin it eventually. So I'm of the opinion that in pre-pottery societies, perhaps we need to look a little bit more closely at things like bark containers and wooden containers as well and not get too tied up with everything being birchbark, there's lots of different barks that can be used to produce bark containers, folded bark containers. So hopefully that answered the question.

Yeah, thank you, that was really interesting. And our last couple of questions are for Caroline, so I think there's two or three questions. The first one is: **do you find it a comfortable method to use and would you continue using it?**

Well it's a little bit more tricky I would say than the, how should I call it, ordinary warping methods. So, in the course we were four weeks at a warp-weighted loom course. And, this is the only weave that I did with this method. The good part of this one is that you only need one skein or one ball of yarn to do the warping. If you're warping for a two by two twill, ordinarily you would want two pieces of yarn, or two skeins of yarn when you're warping, usually. So that is the main gain of this, that you can..., you can use one ball of yarn continuously in the warping, I think. So it's a cool way, but I think that other warping methods are a little bit faster.

Thank you, and then our next question is also for you, Caroline. And it's somebody saying: **I used four instead of six as my starting border. Was the sample you were working from showing 6 threads?** Yes, it was and I completely agree four is..., it really felt like two too many when I was doing it with the six. And I even think that our first trials were with four threads in the setup as well, so I would say four is better. Or at least it's what I'm used to.

That's great, thank you. And then just a quick one, from somebody saying: **I would like to find the photo that you were mentioning in your presentation. Are you able to say the name and author?** Yeah, it's a Danish book, so my Swedish might be butchering the Danish language, so I'm so sorry in advance. It's called [Kirkes Vaev](#) or something like that, Shark's Weave, translated into English and it's Staermose Nielsen.

This is Teresa. I was just going to say that I did find the links to the program that those bladders were used as part of, and they're now posted in the Discord in the Useful Links channel.

Thanks so much Theresa. Thank you all. Bye.