Podcast:

EXARC Showcase: Leaving a Legacy

Next Episode EXARC Showcase: NFDI4Objects and The Wildbiome Project

Previous Episode Voices of Folklore

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Guests: John Kiernan (US)

Introduction: In this episode of the EXARC Showcase John Kiernan shares his wide range of experience, knowledge and interests, hopscotching across various engaging topics. He shares how he became an experimental archaeologist, explores the differences between experimental and experiential archaeology, his reason for starting The EXARC Experimental Archaeology Award, the pros and cons of re-enactment and how failure is a good thing.

Meet our Guests

John Kiernan is an independent researcher with a particular specialisation in flintknapping, inspired by his early encounters with projectile points on the High Plains of Eastern Colorado. In 2018 he did a Master's Degree in Experimental Archaeology at the University of Exeter. His dissertation was on "*Exploring the Combative Efficacy of Neolithic Flint Beaker Daggers of the British Isles*". John's interest spans Bronze Age Europe/Scandinavia through to Viking Age metalworking, particularly single edged swords of Norway's Viking age.

Transcript

You're listening to the EXARC Show run by EXARC, the International Society for Experimental Archaeology, Open-Air Museums, Ancient and Traditional Technology and Heritage Interpretation. Listen in to hear '**Encounters'** with experts within the field, '**Showcases'** of the work and projects of our members, and '**Extracts'** from our quarterly EXARC Journal.

Jess: Welcome to EXARC Showcase. My name is Jess Shaw and today I'm joined by John Kiernan from our EXARC community. John Kiernan is an independent researcher with a particular specialisation in flintknapping, inspired by his early encounters with projectile points on the High Plains of Eastern Colorado. After 24 years in military service, John amassed countless hours involved in site excavations and laboratory work from Maryland to Oklahoma. In 2018, he did a Master's degree in Experimental Archaeology at the University of Exeter. His dissertation was on exploring the combative efficacy of Neolithic flint Bell Beaker daggers of the British Isles. John's interest spans Bronze Age Europe / Scandinavia through to Viking age metalworking, particularly single-edged swords of Norway's Viking age. Welcome and thank you very much for joining us today, John. I'm really excited to have you. So to start it off, how did you get into experimental archaeology?

John: I guess the experimental stuff started much later. Of course, I had an interest in archaeology growing up where I did. I grew up in the High Plains in eastern Colorado, western Nebraska. And I found my first projectile point when I was about eight years old. A lot of people went and looked for this stuff, because there wasn't a ton to do out there. So it was something fun to do for the whole family, and it was cheap. I found my first one, and I just thought, who, what, why, where, how? I didn't know how to make an arrowhead, but I wanted to learn, and then I wanted to learn about archery, and I wanted to learn about all these things that made up the materiality of the culture. I kept trying to teach myself, because remember, this was way before the internet. Little tiny towns where I grew up, anywhere from 200 to 300 people, and we'd live, of course, out of town. We raised registered quarter horses and ran some cattle.

I talked to somebody and somebody said: oh, I saw a guy one time use an antler and do blah blah. I'm like, an antler... Fast forward, I finally kind of started to figure it out a little bit. In the meantime of all that, I got to handle some of the best collections of High Plains Paleo-Indian artefacts in the world. I've been able to do that but all the time still trying to replicate things and trying to understand things. I guess, a little kind of side thing, I've got this real pet peeve with people tagging experimental archaeology when it's really experiential archaeology, and that's what I was doing. I was trying to understand. I was trying to get techniques down. Fast forward a long time, 24 years in the military. After that I was still trying to do knapping and other things all the way through there. A very dear friend of mine, Greg Nunn, did one of the best examples of experimental archaeology. It's published, there's a video out on replicating

the types 1c Danish dagger or Nordic late Neolithic, early Bronze Age stone dagger. I just found that very interesting because we make inferences about things all the time and we base them on our current understanding. But I think if you remove all your biases from you especially, when you try to look at something, that's the only way we're really going to understand and get a little tiny glimpse into our ancestors' life ways. I guess first got really introduced to it face to face in Lyra in Denmark. I had been going over to Norway, to a very dear friend of mine, Morten Kutschera. One year he was working at The Stone Age Center at Ertebølle. I went and met them in Denmark, and he's like, Oh, we're going to Lyra. And I'm like, really, cause you saw these people like Jacques Pellegrin and Errett Callahan from the US. All these people, and you'd see all this cool stuff they're doing. I finally got there and it just happened to coincide with the University of Exeter making their visit over there to do demonstrations, do different things. I met some of the students, of course I ran into Dr. Teresa Kamper. She wasn't a doctor then, but she's like, where are you from? Where are you from? We're from each other's backyard. And then Dr. Linda Hurcombe... and then I started reading more and doing more and looking at it, going, this is something that I find very interesting, and I think I found it even more interesting to the point where I had done this so long that I thought that at that time, I have probably gained enough knowledge, enough know-how to really be able to look at some of this stuff. That's how I kind of got involved in experimental archaeology and eventually that led me to using my benefits from being a retiree from the military to attend the University of Exeter and do my master's in experimental archaeology.

Jess: Brilliant, and you actually mentioned before the difference between experimental and experiential archaeology. How would you define those differences?

John: That's a good question. If you look at Instagram and Facebook, people will be flintknapping and they're always #experimental archaeology. I've been one of those people, call it what it is. But if I say, Jess, I'm going to send you a replica of this arrow point I made that's from the Great Basin... that means tools, techniques, technology, materials, as we perceive them, or as I'm trying to perceive them. To me experimenting you're following a plan because we have to remember, experimental archaeology is based on scientific methodology, which means it must have a research question, and you must eliminate all these other things out of it, because we don't want bias. When we get to the end, if we fail, it's not a failure in my eyes. To me, it's an answer. That means that the way I'm doing it or you're doing it is not the way they were doing it using these tools, techniques, and technology.

So back to experiential: that's me going on and trying something new. That's me going out and trying a new material or trying new tools or techniques. The last few years I've been working on gaining a better understanding of Great Basin archaeology. So that's the areas western Utah, Nevada, southern Oregon, even into California a little bit. They're big, huge deserts. Sometimes high desert, not like your typical big cactus and stuff, but I mean

sagebrush. But they had these huge playa lakes at one time. These things were of course just great basins, pun fully intended, of water. They had huge water lakes and things. So of course that brings animals, that brings people, so there's tons of archaeology around there, but the materials are all a lot of volcanics. So you have obsidian, rhyolite, what they're calling basalt now, some people are calling dacite. But you look at those and you're like, okay, cool. We've got those in other places too and they were utilised for utilitarian and projectile points. You'll see people get a big chunk of obsidian out and they pull out this big moose antler after they've hammerstoned it and that's what they're using. Look, I'm doing it aboriginally. Okay, you're using an antler. There were no moose in that area. Prehistorically, there was no moose in that area. They do have some elk, they have pronghorn antelope, there was some bison or buffalo, and bighorn sheep, and when you go out there and you look at the panels of the rock art, there's bighorn sheep everywhere. Luckily, because it's so dry out there, some tools have been recovered. There was a leather bag found in a cave that had ram's horn punches in it, it had ram horn pressure flakers. Well, I was like, I want to try some ram's horn. And when I tried it with that material, it was like, oh my god, this stuff works so good. And when you look at the edges, they look like the edges we're seeing prehistorically. Then you look at other things, and it's like, well, percussion, what could they be using? And this goes back to learning from somebody else. When I was stationed back on the East coast, I had the good fortune to run into several people... early experimental archaeologists when it comes to lithics, Dr. Jack Cresson. When we had the Conference during COVID, Jack actually presented a paper on out there you get a lot of quartz, quartzite, rhyolite, argillite, all those things like that. And you have like big boulders, and they find that building fires are making these sheets of material fall off. He presented on that, so I was around Jack, Scott Silsby and these guys were doing experimental archaeology. But I remember one time, a lot of the materials out there are pretty rough, they're pretty grainy. If you hit them with an antler, it's like, urgh, maybe these guys should have moved somewhere where they had better material. I remember one day Scott picking up a big piece of rhyolite and he picks it up and he looks at the margin, he's hitting it with a big wooden billet and he whacks it and it goes in and just hinges off and I'm like, great! That was awesome! And he says, just wait a minute. So he flips it to the other margin, same phase, hits it, and cleans it off perfect. He said, this stuff is directional, blah, blah, blah, blah. Antler versus wood, blah, blah, blah, blah. So I'm sitting here thinking, looking at things like basalt from the Great Basin and it works okay with antler, but when you're looking at the artefacts, you see big flakes coming off, and they're really clean. So one day I was sitting out there, I had some basalt, and I had a wooden billet, and I picked it up, and I hit it, it went hinged, and I'm like urgh, and I'm like, Scotts Tilsby... turned it over, directional, boom, hit it, because it's volcanic too. And that opened up another thing.

Even that last five minutes that I've blurted out here, that's experiential. I'm just trying to gain experience. So when I sit down to actually do some experiments, which I've got some things coming up on the Great Basin, like I sent you pictures of these little crescent-shaped things. They're Paleo-indian in age, about 10,000 years before present, 8,000 BC or so, maybe a little

bit later. They're always found around water. It's assumed that they were used for waterfowl hunting, like on an atlatl, they're just wider. You look at medieval arrows, they've got these big crescent-shaped arrows for bird hunting. Of course, people postulate all these different things. They were used for opening oysters. Okay, but what I want to do is I want to take all these ideas because if it makes sense or if it has some kind of validity, why not test it? I've looked at probably a couple hundred by now, and I see certain things that tell me instantly what I feel, but no matter what I feel, when I'm done, if I've done everything correctly, I have to let the evidence or the outcome dictate to me. Is it possible? Is this really what they were using them for? I think experiential work is vital to experimental work**,** but the big dividing line there is: anything goes, it's a free for all format. You can do things that you wouldn't normally do when you're working on gaining experience and what you're going to experiment on. But as soon as the experiment comes on, it's laboratory time, it's the white gloves, everything, you know what I'm saying? Now we're following strict scientific protocol. Because it's so funny how experimental archaeology, when it is going to be used that they're against it because: well, I would have done this differently, I would have done that differently. That's why we have to stick strictly to scientifically-based things, and we have to be able to support it, and objectively be able to look at our own work and say, well, that was a good try, and again, it's not a failure. That's when you have to look and regroup and as you know when you do these experiments like this, what they do, which is absolutely horrid and scary, is they create a whole plethora of new questions. You have one question to answer and you gain a hundred more that you need to research.

Jess: Even if you don't answer the original question you set out to answer, you've suddenly got way more questions and a whole new direction to research. You're so right that failures aren't a bad thing. I've learned just as much, if not more, from failures sometimes.

John: That's why when I look at something, I always leave room for future discoveries and research. Right now, based upon what I see, this is the best explanation for this. However, the next excavation or something else could reveal that there's something different or something I'm missing. When I did my dissertation / thesis at Exeter, I end it basically saying that this is just the start. Somebody else needs to carry it and look at it from their perspective or new evidentiary material. Mine was on looking at flint daggers from the Bell Beaker culture and looking at them for their efficacy in combat. I never think they were ever designed to be used for that but could they be? I went through forensic anthropology, I went through all these different other studies and these other fields to combine it to do actual testing. And I didn't do it just myself because I've got a fairly broad martial arts background that's bladed. So, if I hand this to somebody who doesn't do it, what's the effect going to be? I had four other people, including Dr. Hurcombe stab this ballistics gel torso, and they got deep enough, that had they stabbed somebody with that, it could hit vital areas whether it be the internal, external jugular, whatever. Because the other thing you have to look at, you're stabbing soft targets. If you're slamming it into somebody's skull, yeah, it's probably gonna break. So you

have to look at those things. You'll have to ask Linda if you see her. She videotaped the first stab of that torso. And the torso was probably about 25 to 30 kilos ballistics gel and when I stabbed it the first time I lifted it up off the table and then I did it again and I remember hearing 'oh, this is very brutal, this is very violent' and I'm like, 'welcome to interpersonal violence'. If you're stabbing somebody, you're not just going to poc poc ... But then I take all this data from I don't even remember how many slashes and stabs I did on that poor dummy. But by the time you get done, and you look at it and say, okay, three millimeters is the deepest to get to the closest arteries, blah, blah, blah, all this, I got up almost to nine centimeters of penetration using those daggers. And I've always said, a lot of the Danish ones, I guarantee I could get them even further, a lot further, because I don't think they were ever designed for that. But... if somebody's running at you to bash your skull in and that's all you've got to defend yourself, you have two choices: stand and fight or run. So, could it be possible? You have to look at all those things, put them together and you've got to be open-minded about it. I remember presenting to Linda... one of my classmates, she was really into textiles, and I asked her to make a tunic and I sourced the material. The back part was actually linen. I did that and she goes, well, why are you doing that? I said, do you realize that clothing slows a bullet down, clothing slows a stab down? And then, of course, I had to get that evidentiary material and bring it forward to present it. But that was just a start. If I had more time, crap, I could probably spend the rest of my time just working on that kind of thing, and that's not even looking at how the daggers are made, that's just how they're used.

Jess: So true. And it's such a brilliant piece of research because Linda still cites it. She talked about it when I did my Masters with her.

John: I pay her to do that!

Jess: No, but it's genuinely such a relatively simple premise, but very easily controlled and has really good, clear results. And it's a prime example of why experimental archaeology is so great. You mentioned how you drew from lots of different things, so it's such an interdisciplinary subject that you can draw from so many different spaces, and also there's so much room for creativity.

John: If you really want to get the true answer you can't ignore those things. And it goes back to before we started recording, our little visit about using experts outside of you. I tried to get a hold of some of my military doctor friends and get some information on things that I thought should be really simple. I was seeing a chiropractor in Exeter. He gave me his Gray's Anatomy book to look at, and I figured this would be simple. I know there's going to be variation, but how deep are these arteries under the skin? How is this? How's that? Nothing. So then I found online some place where you could pay a doctor for answers, and I think they were actually in India. So I asked him, I said, using this, and I told him what I was doing, and I was really surprised. He sent back a picture of the Hindsgavl Dagger, which is the national

treasure of Denmark, the big red late-Neolithic, early Bronze Age IV-D dagger. But he even sent a picture back. He doesn't know anything about it. He said this is really interesting. And he goes back and he says, well, I think this would be about this, that. And he gave me these measurements. Then I talked to a couple of my military friends and then some of them came back with things. And even a classmate, she was doing the forensic archaeology or anthropology thing, just for a little side thing to do. And I got with her and got information. So then you take all those things and you pool them together and look at averages. I knew through all my martial arts stuff that, yes, a blade, a bullet, whatever, does meet resistance when it hits clothing. It doesn't seem like it does, but it does. But now I have to go back and find articles and things that support that, or ones that don't support it, and then kind of find the work around there. The thing I liked about it is it challenged me. It really was a challenge and actually a lot of it was fun, but it was a lot of work as well, and it should be. Isn't that what our education is supposed to do, is challenge us, make our mind expand?

Jess: You obviously wear many hats and have so many different interests and skill sets. Would you say you have any specialisms?

John: I would say that flint knapping, of course, and stone tool technology is probably the biggest specialty, and since Exeter and before Exeter, I've really tried to expand my worldly palette, if you will. Before, I probably would never mess too much with making... working with Acheulean type stuff. Levallois, you see that and you're like, oh, okay... until you start working with it. So I've really expanded my repertoire, so to speak. I have a lot of different places, but I'd say specialisation probably North America. Arrow points from all over. If something were to come after that, it would probably be steel. I did custom knife-making for quite a while, but then I went back and I've learned and done forging. It's been quite a while. The last place I forged was in the Czech Republic, forged two Viking age style knives with rod iron, they're welded and all that. I'd still say that pre-history, Stone Age stuff is probably my forte. You said lots of different hats. I wanted to spend more time with Neil Burridge, who is a brilliant Bronze Age replicator. Luckily we get to spend a couple days with him at Exeter. We had actually made contact even before that, so we kind of knew who each other were. I really enjoyed time with him. We do have a Copper Age in a very small area here in the US, but nothing like that. Neil, he's brilliant, he tells all these wonderful stories from that time, Romulus and Remus and all this stuff like that. It's a lot of fun. That's the great thing when you work with people that have not so much just knowledge, they have so much know-how because they've done it. One of the reasons that I went to Exeter and did my master's was I know so many people out there that have no degrees, haven't stepped in a school of a higher education, that have so much knowledge. And I said, I can help you get that on paper and get it published. It needs to be out there. So pulling myself back to the original question, flint and stone working is probably my forte, but I have a very strong interest in weapons development into the Viking Age.

Jess: When I think of EXARC, I think of you as one of the key members, you're such an important part of it. What inspired you to set up the Experimental Archaeology Award?

John: Well, I kind of looked back to my own situation growing up. I had great parents. I had a great upbringing, very disciplined, very responsibility-driven. We had the ranch, there's always stuff to do. But from the time I picked up that first arrowhead all I wanted to do was be an archaeologist. At first like all kids, I was dinosaurs, dinosaurs, dinosaurs. But as soon as I found out that paleontologists didn't do anything with stone tools, I was like, I don't want to be a paleontologist. I want to be an archaeologist. So I started, again, no internet, limited stuff in our library. That's where it all started but dad, my father being a practical rancher, and he ran an equipment repair place, like for a big John Deere tractor, supplies, and stuff like that. He was, okay, you can't eat rocks and bones for a living. And we're talking like the late 70s into the early 80s, so commercial archaeology hadn't really boomed yet. About the only way you're going to get a job is maybe something with the state, maybe the forestry service, maybe something like that - and we all know that archaeology pays so well, even today, ha ha ha. So I was really discouraged from pursuing that path. But I kept doing, I kept looking, kept learning. If there was somebody doing a talk on anything remotely close to anywhere close, I would try to be there, any special that came on. And then I grew up in the hub, I was in the High Plains. So the Jones-Miller Hell Gap bison kill is right down the road and everybody had all these things that I was able to look at, and to feel, and to touch, and to learn about. So then I was like, okay, I can't eat rocks and bones, gotta do something. So I panicked, and I went and got a degree in radio and television broadcasting in Minneapolis. Then I did up my associate's degree in Austin, Minnesota. I got out, I worked in radio for a while, and found that I was making more money working at Pizza Hut as a waiter, and trying to play in heavy metal bands than I was in radio.

My dad was in the military, my grandfather was in the Marine Corps for over 30 years, lots of military people, I'd never had a recruiter talk to me, nothing like that. One day I woke up and I said there's something bigger than me out there. There's something that I need to do because a lot of people did it for me so that I could have the freedoms that I have today. And I joined the military in 1987, joined the Air Force. Fast forward a bit, I get through the military, I'm still doing archaeology stuff everywhere I'd go. Like when I was a kid, dad would go trade horses someplace and I'd always, Mr. Smith, do you ever find any arrowheads around here? Yeah, up in that field over there. And I'd look at Dad and he'd say, yeah boy, you got an hour. I didn't even know what I was looking for. I just filled my pockets with all the debitage and I'd save it all. And then as I started learning I'd look through there and I'm like, that's a broken arrowhead. That's a scraper. That's this as I started learning more. So even through the military, I'm doing this. I get stationed back in Maryland. I get involved with the Maryland Anthropological Archaeology Society. I go out and do my first excavation. I've never been into a class, nothing like that, but I'm sitting there excavating. They're like, John, how long have you been doing this? I'm like, Oh no, what time is it? And they're like, no, no, no, seriously. And I'm

like, no, I've never taken a class, never done any of this. And they're like, your technique is great. And I'm like, well, because I know every time I scrape the dirt I'm removing a page out of the history book, so I need to be careful... the people of the state of Maryland who put that on actually came over and pulled me to the side and said, we'd like for you to keep coming out and working with us, even after the field school was done. I started doing that, and then they started finding out, hey, this guy does flint knapping, all this. They started bringing me out for public outreach, and of course the military likes this because it's public outreach for the military. Hey, look, there's Sergeant Kiernan, and he's helping do this and that. So that kept going, then I got involved with a - they called themselves a primitive technology, that was way before I got onto my soapbox about primitive technology – there was a society at Jefferson Patterson Park. They had this because there was, of course, Native American sites on the park. That's where I first learned how to do cordage and things like that. I started learning all this stuff, in the military, finished my career in the military 24 years, go to Exeter, do all that.

And the one thing I kept hearing over and over and over and over again, especially with students and people who are wanting to do something, money, money, money, money, money, money. Man, I'd like to do this, but I can't because of this. Okay, that's a brilliant idea, you should do it. Well, I don't have the money. Well, what if I fix that part for you. It's not like I'm a billionaire or millionaire or anything like that, but I always make money for the things that are important to me. I have no children. I don't have any, I don't think I'll ever have any children, and I want to leave..., everybody wants to leave a legacy. I want mine to be in archaeology. I want it to be in something that I can help somebody else out. So fast forward a little bit. I talked, I won't mention places I talked to, but I talked to several places that should be set up. I said, make all the arrangements, make it where all I have to do is come in and talk to the person to each year send money to. Nothing. The next place, one place here in the US. Oh, we don't have anything set up like that. You call yourself an archaeological research school, but you don't have a way to take funding for like grants or scholarships? So then finally I was getting frustrated. I'm like I really want to do something, because I see it all over the world. I see people want to do this, and so I'm like, you know something? I said, let me, let me get a hold of Roeland. I told Roeland, he got so excited, he says, give me five days. I said, take your time. Three days later, he's checking it, I've got something working, I've got an idea. Okay, can we have a conference call? Sure. This is my idea. I'm like, brilliant. It's great. Because the thing I wanted it to do, I don't care if it's got my name attached to it or not. The thing that's most important to me is that people have an avenue. If I could, and I mean this wholeheartedly, I would frickin pay for everybody's experiment. I really would, but I can't. I've got to live, too. So Roeland and I, when we talked about it, I said, okay, he said, like, how much? I said, well, what do you think? He says, well, I think 500 euros would go a long way towards this. Okay, let's do a thousand euros and do two of them. The very first one we did, we had so many really good submissions that I said, okay, we'll pick a third one, too. So, the first year we did three. We've had up to like 25 submissions. I didn't want to be really involved

unless it came down to like maybe a tiebreaker or something like that, but still I've gotten suckered into it. But I enjoy it. This year I was a little bit hands-off because of things going on in my life, but still I was involved in the whole process. It was a little different because we split it in two because the first round we didn't have that many. I hope people will take the time to read the requirements a little bit closer. People don't need to worry if their English or grammar is a little bad. We don't care about that. It's gonna matter when the publication starts because it's academia.

However, I wanted it to be something open from a full tenured professor to somebody who just really enjoys their craft, no matter what it is, but has tons of knowledge. Because we all know people who don't have any letters behind their name that probably know more about the subject matter that they deal with than any expert or anybody who does have a PhD, MA, or anything else. That was the big thing and Roeland agreed a 100%. I want this open across the board. If somebody comes up with a way of saying how are they coming up with those colours for the iconographic stuff, the iconography. How'd they come up with all these colours? How did they do this? If that's your thing... One of the people on the board is Tammy Hodgkiss, she's from South Africa, Dr. Tammy Hodgkiss. She's just awesome. I'm so happy she's on our board. She's into ochre. I mean, like, really into ochre, and her excitement is contagious. We have just got Deter Wolf, who's really into tattooing, which is brilliant. And then Dr. Linda Hurcombe was on there, Dr. Theresa Kamper was on there, Roeland was on there. Myself, I was like the most underqualified person of all of them. We added a couple new people today, and they're brilliant as well. So we got all these people, we all look at these things, we all grade them all, and then we pick those people. In the last publication that came out, the last Journal, there was two of the experiments in there. One of the things that my goal is when people are writing their papers, where they're publishing them, first off, it's not always easy to get your publication out there. With this grant scholarship, this award, comes a place for you to publish. And then it's going to get spread, and one of the things I hope that's in there all the time is this is via EXARC, blah, blah, blah. I want people to understand what EXARC is. I just knew that I wanted to do something that was a bifold win, if you will. It's got many facets. First off, it helps somebody pursue something they want. So I think back to myself, I wanted to be an archaeologist. That's all I wanted to do. I wasn't able to do that. So if I can help somebody else take another step forward, and I guess it's kind of almost trifold. Hopefully adding to the body of knowledge of our prehistoric past, and promoting the avenue, the foundation for this, which is EXARC. So, that's how that all started, and I think this was our fifth year already of doing it. And somebody says: when's it gonna end? I don't know, maybe when I kick off... when I pop my clogs. But I'm hoping that if EXARC's still around then there could be like a legacy program where it continues. But yeah, I'm very happy, it brings me a lot of joy when I see the end result. Because things at EXARC are changing. It was brought up that I think we should just call it the Kiernan Award. I said, if that's what you really want to do, then do it. But the big thing is, EXARC is where I want it. EXARC and the people who are applying. That's where the focus needs to be.

Jess: It’s fantastic. The award is amazing and I know that good effects will reverberate out. It's such a thing that will expand because all of those people who you've funded will go on to do their own great experiments and inspire others.

John: Hopefully they’ll even get to a point in their life, hopefully they can do this too. It's like paying for somebody's coffee in line, the person behind you, or the next three people behind you. Hopefully you're out the door before they ever realise that. You’re not doing it for recognition. Hopefully it just sows a seed. I really want the archaeological science part to grow. Hopefully it spawns into something else and continues to grow EXARC’s footprint.

Jess: Yeah, it's so brilliant and everyone I've encountered has been so generous with their time and knowledge and great for even just a really excited chat as we're having now. It's so nice to talk about the joys of experimental archaeology. What advice would you give to someone new to experimental archaeology at the beginning of their journey into this great, great thing?

John: Something that we already talked about: don't give up and don't look at failure as a true failure. If you're going to do true experimental archaeology, I'll say it and say it again... experimental archaeology is based on science and scientific methodology. Therefore, if you're going to do experimental archaeology, you have to follow the rules. You have to set your research question. You have to set any kind of boundaries that there are. You have to eliminate any obstacles or any reason that you're substituting or any other thing like that. It has to be defined. Then, because we're talking about technology, and we're talking about something that we... up to a certain point, we don't really know exactly how they do. All we have is the debitage and the finished product, which that finished product is normally something that's went through a whole life cycle and has a biography all of its own. But you have to really try to get yourself and put yourself in the mindset of that culture and that people. Try to use the tools and the technology that they were using. Because a lot of people say, if you find an arrowhead out in the field, a plowed field, and you remove it, they're like, oh, well, it has no context, it has no meaning. It does if you know how to read it. So looking at that debitage and trying to make an interpretation and then doing your experiment, if it doesn't turn out the same..., because failures during the process are important too. Did you replicate the successes of that technology as well as the failure? Because if you replicate the failures and the successes and your debitage lines up - we're of course just talking stone tools - then you have a very strong probability that what you're doing was following what they did. If you only made perfect things and your debitage doesn't match everything else, they didn’t do it that way. But don't be discouraged by that. That should motivate you to try something different.

My biggest advice, I guess, is make sure that you're following scientific method or scientific methodology. Make sure that you're true to the culture, or what we at least think the culture

was doing in that process, and then do it. I can't tell you how many times I've broken things. I can remember when I first started, I'd get mad, and I'd throw it down and probably said some very choice words. And then one day, an early mentor of mine in flint knapping, he looked across at me, and he said, instead of getting mad why don't you look and see what you did wrong? And at first that kind of irked me a bit. I mean, my last name is Kiernan, so I'm a tiny bit Irish... But that simple thing, instead of getting mad, why did it break? And then I started paying attention to how things were breaking when I broke them. Then out in the field doing excavations and field work, I'd see something and I'm like, I know exactly how that broke. You're like, how do you know that? Because of this. And then there's been places where I've been able to show a prehistoric failure along with my failure, and they're identical. So don't dismiss failures as failures. Look and see why they failed. Don't give up, be thorough, very fluid and very open. But be true to the culture, we owe it to our ancestors. We need to be doing it the best way that we can. And be open for the next time something happens for that to change. A new piece of evidence pops up that makes you rethink everything. Be flexible.

Jess: Have you found reenactment to be a valuable tool?

John: That's kind of a - and pun will be fully intended - it's kind of a double-edged sword. If you're like a big open air museum like Lyra, you have a lot of different facets and you have a lot of different time periods. They're pretty good because they've got a big chunk of land. You have an area where you can say, okay, we're going to do the Viking Age. We're going to represent people from 800s in Denmark. You go back and you look at that and you say, based on all the stuff that we found, how are they dressing? How are they doing? Blah, blah, blah, blah, blah. And everybody falls in that same thing. But if you have people coming from the outside then it's going to be kind of everything goes. You're going to have people that are wearing the big baggy pants from the Baltoslavic region, you're going to have people doing this, that, and the other, and then you'll have really mixes of things because people say, oh, that's really cool, that's really cool. But if you're setting up saying that we're a Viking age village from this time period in this area, then your key players should be dressed accordingly. If your replicated clothing is done correctly to the period, I think it can tell you some things that day-to-day that you would encounter, some things that it can hinder, other things like that.

When I was doing Viking Age stuff, all wool pants, all wool tunic, hand-sewn, one of the first things I realised was damn, I'm getting a lot of holes and things. So I didn't have these brand spanky new-looking pants. I'm spending time every day fixing holes and doing things like that because it's wearing. But, just like in that time period, well, if there was a Viking market, I probably could find another pair of pants. But I didn't because I wanted to keep my pants. I just need to fix these. So you fix them, you learn different challenges that they probably faced. Maybe if you're wearing a cloak that if you don't have it pinned a certain way, it gets in your way when you're trying to do this kind of task or that kind of task. Were there any

restrictions in the clothing? Why is my crotch area of my freaking pants ripping out, and why are his crotch area of his pants ripping out? Because these pants are based on the ones that were found, were designed from one of the surviving pairs. You see these things, so I think that wearing clothing and trying to live day to day, or do some kind of experiments, I think it's good. If you follow the experimental archaeology template, I think that wearing clothing can be very beneficial. My shoes are real turnshoes that Espen Kutshera made, they weren't truly experimental bound. I had just come from living in a village in Norway for about three weeks and that was my clothing every day. I got a blowout in my shoes. When I gave him those shoes, he repaired them and he's like, this is good for me to see, because he's looked at lots of old shoes, and you see the same thing. There's only evidence of three helmets in the Viking Age. What does that mean? That means that everybody didn't have them. Same with the chain mail in Bernie. There's only so many pieces. Why? Because it was expensive. Why did everybody not have a sword? Because a sword was the equivalent of about nine head of cattle in price.

It's just like a museum, we're talking about putting out the perfect things. The curator of a museum really dictates how people view prehistory or the past of their area by what they put out. If somebody comes to the ATC or they come to Butser or Lyra and the people are wearing whatever, that's what people are going to remember as what prehistory is, or whatever that period of history is. So, when you're doing something, it needs to be as close as possible, knowing that there's going to be variables in it, but presenting at least when you're giving them the little tour of your open-air museum, those people should be just living life, what they feel life was during the day. What are your tasks? We need to gather firewood. If it's later, Mesolithic, Neolithic, Bronze Age, we have animals to tend to. These are daily tasks that we have to do. It should be like looking through a window in time.

Jess: Clothing itself tells a story and yeah, reenactment is a really nice pathway into that and a pathway into other things if it gets you jazzed and inspires you to do more research. It's such a great way of engaging the public and inspiring their imaginations, seeing people right in front of them, authentically smelly and clanking in their armour or whatnot.

John: You mentioned something that I think is really important, that it's a lot of fun to look at, too, is, wear and polish. Like the Sutton Hoo sword, there's wear on the pommel that people aren't really aware of because he rested his hand on that pommel and we know he's right-handed. So you're seeing how things react, how they wear, how they tear. Because unfortunately, when it comes to textiles and stuff, we don't get a lot of preservation anywhere in the world.

Jess: Yeah, very true. And as you mentioned with the shoes and the wear on that, very pleasing to kind of see it reflected in history and see that you're on the right path, literally. You've mentioned so many things and I know you've mentioned you've gone on digs and

you're doing so many really cool, exciting sub-projects... Are you working on anything at the moment?

John: Last year, and I was supposed to go this year, I had been working with the archaeology department at the University of São Paulo in Brazil. I was invited down last year and this connection came because of my friendship with my friend mentor, Dr. Bruce Bradley. He's been working with them. So I went down there last year and went out on one excavation with them, looked at several sites, did several demonstrations. One at the university's museum and it was a couple of different groups, kids and everything else which was fun, because of my colleagues, Dr. Leticia Correo and Dr. Astolfo, he's the professor there. One of the pinnacles for me was they asked me if I would be willing to work with some indigenous groups down there. Because like any place else where the colonisation happened, a lot of times craft industries are taken away because they're seen as traditional things. Well, down there, archery is still very huge. But what I found - this led to other doors opening up - I got to look at bows and arrows in their museum, in their stores. So we did that for several hours because there's not great records. And one of the things Astalfo wanted to find out is, can we look at these and maybe start seeing similarities to be able to start showing these all belong to one cultural group. So one of the first reservations we went to, they were in a center and they were sitting making bows. But the interesting thing is, the bows they were making were nothing like what they were shooting traditionally. So, I did a flint knapping demonstration for them using some local materials. And then tried to show them how using those on what they're doing with bows and stuff like that. And I did that for two different reservations. One of them was a little bit more excited about it, and then you had people within the next group but there was plans for more of this to happen, because I said, yes, I'd be happy to teach, because now again, too, now I have to go back and learn again as well. Because a bow is not a bow is a bow, no matter where you go, like arrows or anything else... so that's been a lot of fun.

So Brazil I've been doing, I'm hoping to get back out this year. Dr. Bruce Bradley actually bought a piece of land to protect a ritual Pueblo that was on it. And he worked down there for a long time. He's been excavating it. The Pueblo was never habitated. There's other habitations around it, so it seems like it's just a ritual use place. So I got to go do excavations or excavate with him for almost a week. I'm gonna try to make it out there. It's very brilliant. It's called Wallace Ruin. They named it after the original landowner, because when Bruce was down there, he was working for a big outreach education place called Crow Canyon. He found the site and was working on it. And he made an agreement with the landowner, said, look, if you ever go to sell it, I'd like to preserve it. So I'd like first right of refusal and he got it. And the thing what's cool about it is you have that, it goes through the Pueblo in time, because I didn't know anything about that. That's one of those things where I'm like, darn you Bruce Bradley for making me interested in Pueblo archaeology now. Because it's so different, even though I grew up in the same state, it's in a place where it's just completely different than the High

Plains. But, you also have the pre-, almost like, I'll call it pre-Pueblo, you have the Basketmaker culture. There's pit houses on the place for those before even that ritual Pueblo went in. So that was really cool.

And also via Bruce, I'm working at Paleo-Indian Red Ochre mine site, up in Wyoming called Powars. There's Powars 1, Powars 2. There's a couple different things there. It's a ghost town as well, and a guy named John Voight - not the actor - he bought the place. It's still an active mine, but there is some intact stuff, and the coolest thing is a lot of it's paleo-Indian. I haven't been on the fun part of it, but my friend Marty Reuter comes up there and helps. He found a Folsom, in context, and stuff like that. So that one's really cool. Plus, there's just a lot going on there because there's been so much activity trying to find intact areas, and trying to get good dates with the artefacts. I've still got red ochre handprints on the tailgate inside of my pickup where Marty, I think, put his hand down or something, because if you're working up in the red ochre area, you're gonna be red by the time you're done. So those three places are my kind of primary focus, and I still try to be as involved as I can with those.

And then I do consulting with some friends or colleagues, one from the Ukraine especially, and of course that really slowed down with the war, but a few things have been picking up because they're doing a lot of salvage archaeology because of the war. And trying to protect cultural resources, because of course when that happens, a lot of that stuff gets looted and gets stolen.

And then I'm making some stuff for Colorado State University right now, for teaching in their lithics thing. I've got a box sitting right off to the side right now, ready to go. Full of flakes, debitage, an acheulean hand axe with all the debitage. Some of it is kind of separated into phase or stage and things like that. So I keep doing stuff like that. Just to get it out there to help because a lot of times, especially when it comes to lithics, and here in the US, our oldest stuff, you're not going to get anything else. That's all that's left is the stone. So I think that getting to see in different materials... this is soft hammer, this is hard hammer, this is this, this is that, this is whatever, and oh, here's the piece and here's it all the way down to exhaustion. So some of them all do like tracings or whatever of the pit thing as it comes down to a final piece that's almost ready to be rejected. So they can see all that.

And then I do just my own personal stuff so I don't get bored out of my skull. I've got to keep busy even when I'm trying not to be busy. I've been making Plains arrows because I've got a paper I'm working on, on the indigenous creation of metal arrow points. I've also got one in the works between my colleague in the Ukraine and I. They have hollow base arrow points from the Catacomb culture. So we're working on those.

Jess: Thank you so much for all your amazing insights and I look forward to seeing your future publications and hearing more about your future research. It sounds brilliant. So as the kind

of final question: how can the EXARC community help make a difference in your exciting future research that you've discussed?

John: First off, I know that if I don't have the expertise in something, I have it. Even though I may not personally have it, I have it. Because there's somebody in the EXARC community that has that skill. EXARC is uber important for me personally for helping me realise something that's very important to me, and that's leaving a legacy in archaeology. Hopefully, when everything's said and done, I will have added to the body of knowledge, which I know EXARC has already allowed me to do so in publishing my first professional article. They've given me a format in which to help others reach their same goals. Also stimulating me, sometimes just seeing that somebody's doing something and you're going, yeah that's kind of interesting. If we didn't have an EXARC, where would that platform be? There's tons of things being pushed off as experimental archaeology that just kind of float out in the ether and you just happen to find them stumbling around. EXARC really provides that home for all this if people want to come there, which, if they're going to be doing this... I think it's very important. So, EXARC can help me physically, academically, but just almost spiritually by allowing me a place to help others. Yeah, I've got lots of love for EXARC.

Jess: Yeah, and you're such an important part of EXARC, so I'm glad that you can continue to be part of it. Thank you so much, once again, for joining us and sharing your experience and your expertise. I've learned so many new things, you've kind of peppered all sorts of facts throughout, so thank you, and I'm sure our listeners also will really enjoy this episode.

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