Neanderthals, Homo sapiens and the 'Human Revolution' (Seminar)

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Camilla Power will be comparing the evidence for the emergence of language, art and symbolism between the lineages of Neanderthals in Eurasia and Homo sapiens in Africa. Some similarities and some differences are suggested by archaeological, fossil, demographic and palaeogenomic data. Did both populations engage in the human symbolic revolution, and was this fundamental to interchange between them?

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https://www.youtube.com/watch?v=dSg_RnH0hFo

So, welcome to the Radical Anthropology Group.

I think this evening is going to be quite, an occasion.

maybe Camilla doesn't quite want me to say this, but in my own view, Camilla has discovered something rather extraordinary.

So we're talking about survival and extinction.

and we're talking about it the day after some events in the United States in inauguration of President Donald Trump.

drill, baby drill and I suppose if you aren't gonna set fire to planet Earth, maybe yeah, maybe it's a good thing to laugh about it and have a good time and celebrate it all and we've been hearing about how maybe it doesn't matter so much because we've been told that Donald Trump plans to put Americans on planet Mars.

so what happens on this rather extraordinary planet maybe doesn't matter quite so much as far as I can work out.

Camilla, is not, she's not a geneticist, but has worked out from the genetics, something about extinction of humans and survival of humans.

so just to introduce Camilla, she is unusual.

She, she, she, she got a training here at University College London, under Leslie Aiello in biological and evolutionary anthropology.

Leslie Aiello being one of the, the great, evolutionary anthropologists of the, of our time.

But she's also, a social anthropologist and to cross those, boundaries, it's almost, I wouldn't say quite forbidden, but you'll find if you do anthropology anywhere in this country, you're, you're stuck with social anthropology and not archeology, and not evolutionary biology.

Very difficult, but cross those boundaries.

So criminalists, perhaps best known by having done field work, among, really the world's last remaining, bow and arrow hunters in Tanzania and she was working with women and working on the, the symbolic rituals of, of, of Hadza.

Sarah, I'm gonna sort of stop except to say that, what, what, what's happening here? Can you mute all here please? E except to say that we humans have in the past faced extinction and some of us, some branches of our ancestral lineages actually became

extinct and it is rather important to know what kind of trajectories, established now might lead to a complete extinction of us, of our species, and what possible alternatives might lead to, continuing to, to live under these very strange, times.

So over to Camilla.

Okay. Thank you Chris for, for that, very, it is hard to live up to intro, I'd say.

I wanted this talk to follow on from last week's talk that Chris did with Jerome on the origins of language, because my title is bringing in at least two of the major large brained human lineages.

The neandertals and homo sapiens are African ancestors and the human revolution, among archeologists, and I dunno if there's any archeologists here coming to listen.

the human revolution is a bad name, is got a bad rep.

we take it to mean human symbolic revolution, the entry to the symbolic domain, which Chris and Jerome were talking about last week.

But there are articles out there by top archeologists, Alison Brooks and Sally Mc Britty saying the revolution that wasn't, then Eleanor, Sherry and, Manuel will saying the revolution that still isn't they really want to take the revolution down.

but we are sticking up for it and we are sticking to it because for th nearly 30 years ago, we published the human symbolic revolution of Darwinian account and we are sticking to that model.

I'm gonna show you that model tonight and what I'm gonna try and do is see how much that model applies both to African Homo sapiens and to Neanderthals.

I wish, I wish, I wish I could also try to apply it to the Denny sos or the incredible large brain humans out there in East Asia, but we just need a lot more data with that lot.

So I'm gonna sort of shove them aside for now, but they are a puzzle.

Okay? What you are looking at, well, I dunno how many people in this room even know what we are looking at.

Does anybody in the room even know what it is? Have you got some idea? Yes, please. John.

I can't remember the actual location, but it's, a marking on a Kentucky Stevens.

It's staling mites, but, but yes and have you got any idea where and when it is It? Well, it's, I know it's supposed to be in Neal and it's in Spain somewhere.

It's in Spain and it's old enough that it really kind of, thank you.

That's really fantastic. Somebody does know it's ales.

I'm gonna be coming back to this because this image makes this, installation art.

It's installation art of Im of enact of an impact of interface between geomorphology of staal mites and art by Neanderthals and what that might mean.

Well, we don't have Neanderthal informants, but I want to think about it by the time we get to the end.

really neandertals should have been in, I'm gonna change two screens here.

Oh my God.

So let's just go back to, oh God, go, why isn't that coming won? Go. You need, I just need to have stuff around.

so I'm just gonna give some timelines about the relationships and I don't expect everybody to read every bit of each slide.

Some of these are borrowed, this is Gru and Stringer from 2023.

They're really dating these fossils.

I don't need you to look at the names of the fossils.

Exactly. but what we're seeing, okay, this side is where Dennis over in Asia, the yellow, we are looking at, oh, we're looking at Neanderthals in the yellow, starting at the base seam sw sauce.

Show you that in a minute, which is over 400,000 years ago, Neanderthals.

Now, because those were based on neander toes, it's very difficult to imagine that that blue, which is the heidelbergensis over there, is the daddy or mommy of all the lineages going to Africa and the lineage is going to Europe and Asia, it, it's not really happening in time.

So how far back, who, when and where would be the last common ancestor of us Neander tolls and Dennis s potentially going right back to this guy Herman intercessor or something like Esor that's going pushing back past seven, 800000 Antecessor is also known from sites at Puca in northern Spain.

but it may have an older, root in Europe in in fact either Antecessor or something very like it as the possible last common ancestor, when there possibly somewhere like the junction of the Middle East.

But that would imply going back into Africa there, which is that's a bit extraordinary if that's true, but that's the timeframe of this common ancestry.

Now, what I wanna say is, I am not going to be arguing that Denny servants, Neanderthals, and us were all symbolic.

I think we were. But that, that implies that the last common ancestor must be symbolic.

I don't think so. That's not what I think.

Whatever that starting point is, it was the processes that went on going to us up there in Africa, going to the neander tos in Europe, going to, the Deni servings in Asia.

The processes of enlargement of the brain size was what ca was what created the interaction with a symbolic domain.

Now, that is not saying, it's not what I'm saying because we got bigger brains, we could suddenly get clever with symbolism.

That's not what I'm saying.

What I'm saying is we needed symbolic strategies to get the food to feed the brain and particularly it was females who needed symbolic strategies to get the energy to feed these incredibly large brains.

That's the basic model that clear at this point.

Okay. right, let's just go again.

This is very strange. Why Burdensome babies? So why does that not go? Guess? Guess so.

Yeah, it's funny over just to another slide borrowed from Chris Stringer, apologies to Chris Stringer, but, this is just showing the extraordinary collection of the base on Neanderthals from this great pit at Ella Square sauce, puka in northern Spain and it's this particular specimen, Sima five, which ha which is showing the neandertal traits, the pulled out face, progno and the back of the skull.

Very neandertal like saying this is pro to neandertal people and that's why they've shoved aside, Heidelberg, Ansis really as a possible kind of daddy of them all.

but this is an amazing site where there's huge levels of mortality, 28 minimum numbers of individuals from all the bones that are assembled in that pit.

huge levels of mortality for teenagers and adults.

I may say something again about puer later on that.

Yeah. and that's just to show again, the lineages going to Africa through Jeb hood, basal human homo sapiens basal for our lineage.

Denny Sos would've branched off there, the d there before.

There's our SEMA five, which is the base of the Neanderthal lineage there.

It's being correlated at about last common to 600,000, but probably that's going being pushed back in time.

There was genetic sort of clock evidence suggesting that, but it's been pushed back in time.

Can we go forward, right? No, I'm going to go to very recent publications this Christmas.

So we've been working on these over Christmas or since then and what's been particularly exciting that you might have heard about in, newspaper reports, there's timeline, the point in time of the admixture happening between Neanderthals and ourselves.

So this is clearly being the, I wouldn't worry too much about the workings here, but I'm just going to look at the timeline, which is a 47,000 midpoint with a couple of thousand years or two to 3000 years, either side of that 7,000 year long period, a single extended period of gene flow between Neandertal and homo sapiens populations presumed somewhere in the Middle East, it's very likely as, people coming out of Africa beginning to intermingle with Neanderthal populations in the Middle East.

Now what they are tracking through with their, examination of these genomes from all these ancient modern humans and ancient Neals that they've been analyzing, is that there is immediate selection for certain variants that neandertals are providing for modern humans.

These would be things like, metabolism, energy, um metabolism, immunity, disease, pathology and so on.

potentially skin pigmentation though, I'll show you some of that.

and that was, those were being selected, taken up quickly whilst there would also have been this purging of neanderthal alleles that just weren't working in interbreed-

ing with modern humans, that they were just being kind of, they're called intergress deserts.

They don't get taken up and then from that process, a selection on the standing, what's left standing.

Now, what's particularly interesting among what hasn't been purged, I'm not gonna say much here, but if anyone wants to, to ask questions, though I'm no expert in this, is there is some argument that autism autistic spectrum has arisen as an outcome from this interbreeding and its probability is calibrated with presence of certain neandertal sequences.

This is not saying something so simple as neandertals we're autistic.

It's not saying that it's something about the combinations, but, but what's really, really interesting is that the autism wasn't part of this rapid purging.

It wasn't an integration desert means that there was something there to pass down, okay? And it was beneficial. We can't make very strong judge.

We need a lot more work, but it, it wasn't non-beneficial, let's put it that way.

We dunno.

So now let's go and find some of these amazing women who were part of these processes.

Some of you may have seen secret lives of the Neanderthals, the work by Emma Pomeroy and her colleagues on this new burial find sh a z woman who was found as part of what was a famous supposedly flower burial at shear's, northern Iraq cave, the Kurdish region of Northern Iraq and she's dated to some 75,000 years old.

and, an expert like Emma Pomeroy or Chris Stringer, they can tell this is a neanderthal scale.

This is a modern human homo sapien skull.

They can just they can see it, but if you start to create the face, the muscles, the tissue on the bone, if you start to make she ed as she looks, you imagine her emotional expressions, her behaviors, her gestures, and then you have, and here we have another beautiful reconstruction, but in a portrait of the lady SLA from 45,000 years ago, this is Cheche in Europe, central Europe.

and she has been, excuse me, can you mute all here? And she has been, painted with veracity and accuracy from the genome.

Her genome is one of the very oldest tomo sapiens genomes that we can recover.

and you, you are just seeing that these populations when they're, they're meeting there may be differences, but there's also so much potential similarity that they're able to register with each other.

even though they're recognized separate species, they're quite evidently able to meet her, meet greet hybridize in who knows what various ways.

but Zla Kun is above all being celebrated for the fact that she carries that signature of the Neandertal Modern Human interbreeding event that happened in the timeframe of 47,000.

So she's dating in Cheche, 45,000. Okay? every, per everyone who traces from out of Africa movement present today in on the world Today, in the world Today, everybody from out of an African heritage, okay, who's moved out of Africa and then had descendants to the present day, carries this Neanderthal timeline, admixture of 47 or so thousand years ago in single event.

Now, SHA Ed is before then, but it's presumably her descendants or some of, related populations who contributed to those.

Shannon Ed's Very interesting that she's in, she's old for a neandertal lady.

She's pretty old. she seems to be in her forties.

That's quite notable. We'll say more about that.

Okay. And I, I'm gonna skip through.

See, these are some of the older fossils, that, are also implicated in the neandertal inbreeding, like Slaty Kun, they do not have present day descendants, but they were definitely there in Europe, very early stages.

These are famous teeth and jersey showing from Neander tos at Jersey Lacot mixture admixture with modern humans, 40,000.

This is in the other end of the meeting points, the early end, showing a, an a site in Greece, edema in Southern Europe.

Where is it? Where, oh, sorry, sorry.

No, you should just say it to me. Ah, yeah.

Yes. It's just collect. Yeah. Thanks Ruby. Thank you.

Say just cuing, edema.

One turns out not to have neanderthal characteristics and is really quite early in Europe.

Southern Europe over 200,000 years ago, in fact, grin and stringer dating about 200,000.

But, that is suggesting there are modern homo sapiens coming, popping into Europe, quite southern Europe already quite a lot earlier and of course, one of the notable aspects of the Neanderthal genome is it does not have a separate y chromosome.

It does not have its own indigenous y chromosome.

It seems to be already carrying a a y chromosome that's shared with homo sapiens even at that stage.

let's try again, A pre micrographic.

Yes, this means that there were, Chromosome question, what does that mean? Why chromosome is, is what's inherited in the male line.

It's what defines male and passes down through male lines.

But yeah, let's tell any any, it's just one of the aspects of of Neandertal genomes that is a bit surprising.

Why haven't we got a lineage which shows neandertal male chromosomes? Not least because I'm going to say, neandertal genomes tend to show that they may have had petrol locality, which is pretty surprising in a lot of ways.

okay, now I'm back to another slide of Chris Stringers.

Thank you Chris Stringer for this one.

But I have modified it and updated it and used it many, many years.

I wanna go to the timeline of the archeology of human origins and I think, I think I have, my colleague Ian Watts here on the Zoom to help out if I make any errors.

What Chris Stringers simply did was show the timeline of the presence of Red Ochre pigments, anthropogenic man U Man human used, ochre going back at least 300,000 years in a number of sites.

So East Africa, twin River, Zambia, pinnacle Point Plaza's down on the South Lobos, all on the south coast of South Africa.

in fact, from, in what's own work in the Northern Cape sites vanderberg, that Ochre goes back even older.

It goes back, we are gonna see a little more detail on that and then we get these amazing what we, what we are arguing within whats, I would argue the ochre is our very first signature of any ritual activity or symbolic domain.

It's the first symbolic medium for African human culture homosapiens, but then we get these shell beads coming up as well.

Lobos is quite well known.

School is in the Middle East burial, but very recently there's been right back to over 140,000 years examples of shell beads from Morocco, okay, up in North Africa.

so remember that bit.

and our first basal homosapiens ancestor J Hood is also Moroccan.

there's a number of of, of, cranial J Hood.

so Morocco is really very cutting edge with that basal, the basal homo sapiens flat faced, but still not yet.

The Glo gular football shape skull.

So the first thing that happens, the first part of Homo sapien speciations that relatively flat faced not like a Neal Face, OMA Kish herto, both Ethiopian Oma kish somewhat over 200,000 Gru and Stringer aren't putting it too far back at, behind 200,000 Herto 160 same time period as that site pinnacle point on South Africa.

these are fully, fully as if like today in the range of modern homo sapiens today, a GLO skull with a flat face and so we are looking at the fossils emerging with our species, the symbolic aspects emerging.

So now I wanna just say a little more specific about this timeline because we have, we have had recent work, yep.

To check out, what is that re doing there and of course, rag is associated famously with a particular model, which I'll just show you in a minute, female cosmetic coalitions.

But this team from, university of Tubingen who were doing the Rachi, project led by Rome DKAs put out in 2022 an exceptional article on the record, the emergence of what they called habitual OK use in Africa, and its significance for the development of ritual behavior during the middle stone H and we agree with this article on almost every aspect, and they also drew of my colleague Ian Watt's work in analyzing the a Pan-African spread of ritual local use.

So I'm just gonna take you through that.

let's go here.

So we'll just, so they analyzed a hundred sites trying to answer the question, when and where did habitual local use emerge and what significance did that have for ritual behavior? their time averaging to identify right continent wide from south through the East Africa, right over to North Africa and the question of what sorts of of materials were being used in Central Africa is another matter that Ian could talk to.

so they bring up three phases here.

They've got three phases of the beginnings and initial phase going back potentially as far as 500,000.

The really early spots are down in South Africa, the Northern Cape, the ones that Ian Watts has worked on in Vanderbilt Cave and up some in East Africa.

It just beginnings then in emergent phase from 330,000 years, which is coinciding with the, our speciation actually to 160 and you can see big blobs starting to crop up plenty in South Africa, starting in the various parts, going up to the north.

and then 160,000, this is what they call the habitual phase.

and you can see this giant, this is all South Africa.

This is East Africa, this is right up all around phase the revolution.

You don't need to steal my thunder here when myself and Ian were seeing this chart and it's like the hairs going up on the back of our neck because is this okay? You can say is that one phase or two phase? It's kind of trundling along at the bottom and then rocket rocketing up.

We are seeing, we just said, wow, this is dating.

By that time I would doing message, this is dating the 160,000 human revolution, human symbolic revolution.

and so this habitual, what they thought when they're seeing this habitual OK use is a proxy for the emergence of regular collective rituals.

While okah can have functional uses, the visual display they say is primary.

The redness of the visual display is primary middle stone age OKRs reflect costly repetitive behaviors.

Exactly what Chris and Jerome were talking last week about, about how language is this incredibly cheap, a signaling system with zero cost, which is unheard of in the animal world because to have such a signaling system, you need infinite trust.

Where does the infinite trust arise from? It rises from the costly regular rituals.

So they are identifying the time, the place where these costly regular rituals are arising.

and they're talking also about the red residues on the Shel beads Biz moon, that site I was pointing to, the very earliest site with shell beads has the rare coloring.

and it's right next to great big lumps of the ochre as well.

so it the, it, it's, and it's only within 15 or 20,000 years at the beginning of symbolic period, it's very short time period.

I mean, now time periods that short, this likely, the argument is that those shell beads are taking off the body paint that might have been used to color people's skin in ritual.

so they view Dhaka's view a large proportion of the er fines of the MSA, the middle stone age material remains of past ritual activity and we couldn't agree with them more.

It's exactly what we think.

The emergence of habitual collective rituals is one important prerequisite for the evolution of symbolic communication.

Yes, we totally agree with that.

In fact, we said it long time before they did, which they know because they were taking our model to test our model, okay? and in in particular they use the idea of shared fictions.

Chris was talking last week about sperber's understanding of what is symbolic.

It's symbolic because it's false that leopard's a Christian and doesn't eat meat on Tuesdays fast.

It's symbolic because it's false.

It's a shared fiction, a shared story, a shared imaginary shared lives.

Okay? You've gotta have an incredible amount of trust to share your lies with each other, okay? This is the basis of the symbolic, okay? So Dub shaki was really putting to the test and giving some punch bag treatment to our famous model.

I mean, it is famous, but a lot of people don't wanna talk about it.

But it is female cosmetic coalition model.

I dunno, how many people in the room have never heard of this? How many people go on? Oh, up. Oh, up. Oh no, a few. A few.

Okay. So I've gotta take you through it a little bit.

this is our article from 30 years ago in April.

We will be celebrating the anniversary of this article.

It's a landmark article that's tucked away in there.

why, we win, we beat D and the others because we have a really good answer evolutionary account of why is there all that red ochre there? Okay? I'm just gonna take you through these simple cartoons to give you basic understanding, but I will come back to it because I wanna apply it to Neanderthals as well.

So the problem with red is the problem of menstruation and in our ancestry, we lost any kind of other signal of conceal.

We concealed ovulation so that if males could see a bunch of females where one's menstruating and all the other females are like pregnant obviously, or breastfeeding obviously, or menopausal.

The girl who's got the scarlet girl with her blood, she's the one to look at.

She's the one who within, she's not fertile, right? Then within a week or two, she's the goods.

So as soon as one girl is menstruating, all the males attention to her, all the females kind of worried, well, what's gonna happen here? This situation. Now, all those females may be her relatives and friends, and what they do not want is for any particular male, whoever he might be, to be dragging her off somewhere or taking control of her.

So they wanna take control of her, they wanna make sure they protect her in that situation.

That's why you're dealing with sort of a now, not, not now.

Well, no, no, we're not dealing with apes.

We're dealing with like erect. We're not dealing with apes.

What kind of ape? Common poin pro people like me, we're talking about, we're talking about a transition between primate logic and a human logic.

That's what this is the, I mean, the thing is that there could be two ways to deal with that situation.

This situation would've come up again and again since homo actus or since even homo would've come up again and again and again and it could have been solved in all this bit of the bit of hustle, a bit of, but at a certain point, because of our extraordinary requirements of very large brain size, those, those women aren't gonna just be able to let a girl go.

No way. She's incredibly valuable to them.

They can either totally hide the signal, just not even let the males know about it, because that's a bit like concealing ovulation.

Nobody knows about fertility or they do that.

This is what we call female cosmetic coalitions.

They make a picket line using the ochre or whatever other pigments or or color they might have, which might even be their own blood and I've seen that in real ritual.

And, and they're just saying, you, you, you don't, you don't single one of us out, you deal with all of us.

They're just showing their unity.

They're establishing a taboo.

They're establishing a no unless you guys get out there, find something useful, do something useful, bring it back, then we'll see.

This is pa, this is based on what Chris has argued as sex strike.

Now these males may be a bit puzzled about that situation, but as soon as that's arising, the males who are very willing to work and to go and do something useful and bring something back hunting, hunting, serious fatty, I mean, what do females need for the brain size increase Things like fatty meat, incredibly important nutrition and the, the guys who are willing to do investment, they will be very, very happy about this.

Why? Because the dominant male, like the Trump male, let's call them the one who just wants to grab the p***y and what have you, is, is faced with this.

It's a no no.

But the ones who are gonna work, they're gonna benefit, they're gonna help.

Why they're gonna lose, they're gonna lose to their own offspring, okay? They're gonna be helping that. Okay? I've spent a bit of a time explaining that because there's, this is part of rags usual arguments because this is our, we've been working at it a long time.

okay, so now where do we go? Is that it? Is that clear enough for now? We, we will come back to this.

I wanna move to the Neanderthals now, that's too far.

Oh, why the Amy? But some of the have any, has anybody heard recent stories about why the Neals se man extinct? What, what things they come up with on that, which I haven't even bothered to put up there.

Anybody heard anything recently? There was Any clever I've Martin humans who wage walker against them and drove them to extinction? Oh yeah, this idea.

I mean, there was some article in some disreputable thing called the conversation written by somebody who's actually a lizard or reptile expert who doesn't even know anything about fossil humans.

trying to make an argument about this great big sort of warfare stage between, and I'm gonna be showing you why this is so, such to be treated with ridicule.

These are nomadic hunting gathering populations and nomadic hunter gatherers don't do warfare fundamentally.

there have been all sorts of rather dumb explanations for why Neanderthals went extinct.

Things about they couldn't speak proper because the base of their skulls was too flat and their tongues didn't bend at the right angles, which has just really been rubbish.

Steve myON has just published another book, I can't remember its title on language, trying to suggest that, well, in the first place, he tried to suggest that Neanderthals couldn't join up their brains.

They had fantastic modules for maybe a natural history tracking animals and doing tools and social relations, but they couldn't join it all up and recently he's tried to argue that they've, their language lacks metaphor and we are like, language cannot lack metaphor.

That is the basis for shared fictions.

You can't have no metaphor in language.

How does that describe as language? Things about the size of their bodies compared to their brains and that may be they, they're such big bodies compared to their brains that they may be not so, so smart.

You know, not the smartest teething box, life history difference.

Now that might be a bit more interesting, but Eric Trin house, when he put that forward about in the eight late eighties, he was trying to suggest Neanderthal mothers because of bigger pelvises, more opening, could have 10 or 11 month pregnancies or things.

But that was soon blown outta the water by the kabarro pelvis being discovered and shown that that was a male pelvis.

But if you modeled it for female, you could show almost the same kinds of opening, diameter it for human childbirth, homosapiens childbirth, but some aspects of life history difference could be, will, will come onto that later.

Things like they couldn't hunt so sensibly they were doing much too much brawn rather than actually clever strategies.

Cold adapted, but not flexible in the fame and the tos have been through more ice ages, interglacials, ice ages, intercos, and they're going to be outcompeted by some upstarts coming in from Africa.

Sorry, what? I dunno.

so as, as I say, the warfare models, like I just, so I'm not even gonna put it up there.

The, these are all, I mean, it's interesting to get these suggestions, but what is more interesting is to look at, well we've got the idea that there's cognitive deficiency of neandertals is just going out the window because more and more is discovered in terms of their incredible skills of fire working, creating glues and resins landscape firing 125,000 years ago, amazing evidence of clearing forest clearings to get animals coming in to graze and then a this sort of manipulation of landscape leather working, creating sophisticated clothing, many, many examples of burials up to 23 sites with potentially 44 possible deliberate burials, some of which are suspected to have some symbolic artifacts and grave goods.

I mean, that's all, but what I'm really, really interested in, the symbolic artifacts and behaviors, and there's just so much of that beginning to bubble up and beginning to, it's like it's hiding in plain sight and now getting dating that removes neandertal materials from the homo sapiens range that it probably is done by neandertals, including some examples of possible monuments.

The pigments is what I'm really interested in.

Jewelry aspects and then there's rock paintings and engravings that we are gonna have a look at that are les material right at the beginning.

Okay? Gonna end up there.

it's, I missed one. No I didn't.

Okay, I'll come back and of course we see the depictions and representations of Neanderthals just utterly changed.

Those ones on the left, which were created by, it was Kka, French kka for Mabu, the French archeologist of Neandertal caves and, they were just these bulking, brutish ape, yeah.

Eight men, with an extraordinary hairy and extraordinary dark skin considering, well actually it was our ancestors that came with dark skin from Africa.

But, this kind of depiction of brutish neanderthals has really been revolutionized.

This is a little picture for the shaar flower burial, which of course is people of dispute about that.

did gerbils do the flowers? Perhaps a beautiful sophisticated suave neandertal Italian Neal from f with a raptor clause and the all the nice, yeah, it's men getting the red paint for some reason.

We'll talk about that. this is a guy who's there in the Natural History Museum.

He's got plenty of black paint, which is also, good for Neanderthal representation, but most importantly they're beginning to do a little bit, oh, I haven't got that one.

So thoughtful. The ones on the right.

yes they do, they look intelligent as if they wouldn't be with those large brains and now much more representation of the people who were really at the cart of you.

The questions of Neandertal, how did they get as far as they got? And even lend jeans down.

I mean, they're here in us too still and it was a matter of the young women, the older women, the lady of San there, this beautiful that is.

So Tom Bland, who also has painted, the Zon lady that we'll come back to later, the homo sapiens from Chea, she's called, yeah.

So let's see, what are the sorts of models, I'm not gonna go into detail onto this model.

The sorts of models that I'm interested in are behavioral ecology models, different ways that neandertals, if they had different kinds of bodies because they're bigger, heavier, shorter limb lengths, that might mean what's good.

How, how, how far do they wanna travel in a day may be very different from how far long-legged homo sapiens wants to travel in a day.

the, the type of terrain they want to negotiate may be different types of terrain.

so different use of, maybe they need more energy, different use of energy.

Maybe their campsites need to be kind of eaten out a small area around the campsite and then move the campsite.

This means that they're not going to make heavy investment with lots of Ikea furniture and stuff brought into the campsite if they're gonna be moving their campsite very quickly, obviously.

so there's gonna be sort of suck lot of subtle differences between the, the, the ways Neanderthals behave, the ways modern human behave, but it's not about cognitive deficiency, it's about, yeah, how they negotiate their environments.

Okay, this is the model.

I'm gonna have to, rush down a bit here.

But this is the model that we particularly thought of entirely that would look at a difference potentially between Neanderthals and ourselves or ourselves.

The homo sapiens lineage is what I mean, because ourselves include some Neal Genetics, some of us and we were thinking particularly and I, this model goes right the way back to, to when I was working with Leslie Aiello and another master student here, Catherine Arthur and it's looking at reproductive synchrony.

Now, some of you who may have heard of this infamous and, not believed in by scientists think called menstrual synchrony.

Some of you heard of that menstrual synchrony and now the scientists were pooing now, and it doesn't exist.

It's just in women's imagination because, because it, it kind of they, they, they realize they're synchronizing and they don't realize the rest of the time.

But the trouble is, of course, is that primates, lots of monkeys and apes too, plenty of synchrony.

It's, it may not be menstrual synchrony so much as ovulatory synchrony.

If females overlap time of fertility, this has an amazing effect on social structure.

I'm just gonna show you what the effect is.

So here we just have a bunch of females, they're like clocks showing when are they gonna be fertile? Exactly When their sort of faces, this female's gonna be fertile, right? Then this guy is like ahead of the pack.

He's somehow, he's that Trump male who can grab the p***y first and he's gonna go and what he can do in this situation, these females are desynchronized, they're not synchronized at all and he can go to her and then wait, wait, wait, okay, now he can go to her and then wait, wait, wait.

Oh, now her, and then this, that one, that 1, 1 1 to pick him off one by one and they, it all goes to him.

Donald Trump win ifs.

Don't do something about it.

I like that. Pretty magic.

So is menstrual synchrony useless? okay, so if they do that now this is real life, real life with wild chimpanzees.

This is real data from Thai forest.

Oops, sorry, I didn't get those turning.

Oh, I've gone too far ahead.

Real life of wild chimpanzees.

The gray columns, one or two females in Easter, so fi wild chimpanzees show when their moments of fertility with great big Easter signals, black columns, when there are more than two females in Easters, meaning they're ready for sex, they wanna have sex because the males think, oh, they're sexy and they're fertile.

Now this is about dominance, rank of the males.

Notice the Trump, number one alpha male.

If the females are not in sync, he gets like 90% of the offspring, 90% if they're not, and then number two doesn't get anything.

That's because number three gets a tiny smidgen.

cause he's the Allan.

One of them is Donald Trump, one of them is Elon Musk.

I can't tell you which is which as soon as the females come in sync, woo.

Even the under threes, the less than three ranks, part of it in the mating system, okay? Is menstrual synchrony good? We're really talking about seasonal synchrony here as much as menstrual synchrony, what matters is the overlapping of fertility cycles in time and sexual behavior, sexuality in time and it will affect male behavior, affect outcomes of fitness for males.

Now, I did all that stuff with Leslie a long time ago, but then we met, our good friend VCA summer, who has an enormous, I'm sorry, it's not very well presented with the red.

They, I like using red.

If you can understand why Langer case studies, he knows as much about Langers and their, is that Toyen Toyen? We are talking about the Pan-African revolution here.

You know, seriously, this is the thing and the meeting between homo sapiens and Neanderthals and how much Neanderthals knew about it too.

But we've got the dates.

We've got the dates we do.

and also I'm gonna be getting onto the African explorers who entered Europe 45,000 years ago, which had produced the oldest genomes of homo sapiens.

Five minutes time there.

I haven't got five minutes time if you No, no, no, I haven't.

Just think if you wanted to better in an hour.

Got five seconds time. Yeah, 10, it's 10 on that.

But anyway, yeah, I know you're very hardworking, but I'm telling you, this is the Pan-African revolution of the created homosapiens and the humans.

Back to monkeys. Back to monkeys Langer's, this great world expert of Lang Langer's.

This Volker is this great world expert of Langers and he could really compare a couple of Langer populations.

One living in Nepal, Ram Nagar, highly seasonal reproductive population.

The other in Japer in India, they're the same species.

But in these two populations, these are two extraordinarily different types of things because one population, r negar very, very seasonal tied to the reigns and females could only become fertile at a certain season.

Whereas in Jupa, you can see these s they're part of the temple complex, and they get fed all these goodies so that the females can actually have babies anytime of the year.

cause they get provisioned. And this is what happens in the Nepal groups, very seasonal, multi male groups, lots of males, just exactly what we showed with the synchrony models.

Lots of males come in the group and the females are sexy, extend their receptivity more of the time because they wanna mate as many of those males as they possibly can.

They are confusing the paternity for those males.

and they're giving subordinate males extra reproductive success and that reduces any chance of infanticide.

It means the males just, if, if they've even just had sex with a female once, they don't wanna do any harm to her little baby.

It could be the jumper ones do something really different and that's, they're not seasonal because they've got the provisions.

One single male is like the Trump male, he can go from one to the next to the next and they literally, the females lined themselves up in a queue and what's really interesting, I mean, super interesting from our point of view is compared to the ranna gar, monkeys who do not show when they're menstruating, they won't sh they suppress all the signals.

These guys, the same species show that male un menstruating, un menstruating are menstruating and they only have have a few days when they wanna have sex at all.

I mean, why waste time with sex? Why have more males around? They wanna have more food, so get rid of the males and they have more food.

So they actually have a different signal menstruation showing just a few days of having sex compared to the R Negar lot.

So these females are modifying their, their signaling, and it comes out with, whilst they confuse the paternity on lots of males, these guys in job per pick on one male as the top male.

They, they, they give him all the paternity basically.

Now the terrible thing happens that at some point he gets toppled and then unfortunately their babies get it in the neck, but it's still, it's like a trade off.

So long as he lasts, they have more food, they have more reproduction, and then when he's gone, they have to start all over again.

Total difference between those populations.

Now we aren't like Langer monkeys in most respects, obviously because of ours.

Oops, sorry, I'm not doing the zoom one.

Ours and Neandertal very, very large.

These are large brain sizes, enormous brain sizes compared to twice a chimp size for like a erectus baseline and then in the last 500,000 years, modern humans and Neanderthals, and we show a little more detail on that just a minute.

Langers do not have a very lot, they're very small brain monkeys, just normal monkey brain sizes.

but they have the same kinds of sexual signals that we do for a lot of the same reasons that we do.

the concealment of ovulation.

We don't show ovulation continuous, I mean, humans actually have more time window of having sexual activity or not anytime in the cycle.

Actually that is more than almost any monkey or ape.

It's absolutely your ordinary, any monkey or ape.

and it is just confusing males about when are we actually fertile? You know, we, we, we would like males to think we are actually fertile most of the time.

Eh, fine, very well designed for confusing paternity.

Just like Langer have the same kind of system.

It probably is a really old feature for Homer lineage.

It would be there in Neanderthals to it.

It would've been in Homoerectus because it's fundamentally counter and infanticide strategy.

Get males involved in matings and think that they might be the daddy and then you're not.

Sarah heard his insight, wasn't it? It was Sarah Hardy who really made this argument and her, her thoughts have been borne out by most of the studies of the evolution of primate signals.

But menstruation, I showed you it a bit earlier.

Cosmetic coalitions, menstruation is the big giveaway potentially because, someone who's menstruating is not pregnant right now, but could become fertile in the very near future.

So let's just do a, that's again, the basis of why the female cosmetic coalitions.

Any female that's menstruating doesn't have any other signal.

She is immediately of interest to the males that therefore creates confusion and co and contra and possible competition among these males.

Potential com competition amongst the females that the males all want to focus on that menstruating girl.

So the other females need to take hold and control of her.

They've got two possibilities.

Hide it or show it right off and join, join everybody in the signal.

We are all menstruating. okay, now what I want to, oh yes, oh God.

I haven't got the ability, I haven't got time to explain all this, but what I did with Leslie back in PhD modeling was to show, if we take the perspective of number one male, the Trump male, the dominant male who can go from one female to the next to the next, to the next, if females are in a random pattern, that that dominant male will just win it all.

He, he will just go from one to the next to the next.

He can. This was using parameters of homo hominin, inter birth intervals of four years and say a few cycles, three or four cycles before becoming pregnant and you can go from one to the next to the next kind of thing.

But if the females are lined up on very seasonal tight framework where only part of the year are they likely to be fertile, actually, no matter how dominant the male is, he can't access more than one female a year assuming that those females are requiring males to be, yeah, stay with me, just stay with me, otherwise I'll decide to look for somebody else.

You know? So if, if, if a male needs to be highly attentive, he's gotta stay there, he's gotta stay there, he's gotta stay there and there's not much he can do with that.

This is like boxing the males in to pretty decent, at least to a bit of investment in the beginning of a child's life.

Even the dominant males will have a tip to this kind of strategy of a mitch bit more investment, a bit of paternal investment, even the dominant male, even the Trump males in this.

But in that situation, not a chance.

Not a chance, okay? Why does seasonality matter? Because if we start to talk about neandertals, if there are any Hom humans who we are seasonal living through ice ages, serious glaciations, well neandertal females would've had extremely seasonal reproduction during glacial phases and if we are not going to try and talk about Deni bins and East Asians these days, but if we think of Haren Homer Longie right up in Northern China, think of the Deni Sovan pango in Tibet, gi jawbone.

These, these hominin, these humans, very large brain humans would be absolutely seasonal in their reproductions.

Absolutely no doubt about it.

So that is suggesting something about, male males kind of not having anywhere else to go.

There's nowhere else to go with females in a year, stick on one female look after her, and then when she's kind of definitely pregnant, there's nobody else around.

There's nobody else to go to. Okay? So we are saying this is definitely applicable to Neander pulse during glaciations very strongly.

Okay, so I need to rush a little bit.

I just wanna say a few words about this incredible mysterious and amazing site of 176,000 years.

I know how many people know, a cave, a deep, deep in caverns, in south of France.

It's a place that is difficult to get into.

it is, you need firelight torch light to go in there and it would create a lot of smoke and fumes and there are these apparent kind of elliptical rings of arranged broken stites stalactites staite.

I think they are mainly, and this must have taken a probably a couple of days to even create it.

It is very mysterious what on earth is happening there? But it's very hard to imagine that those Neals of that date in that place, we're not accessing something symbolic and ritualistic.

We'll come back to the actual climate conditions concerning this is another extraordinary ritualistic type of object from Hungary.

The type of plaque, oops, sorry, I'm moving it forward on one the other about a hundred, just over a hundred thousand years old, made on an elephant mammoth molar with very much rubbed with red ochre.

So we've got some, we are starting to implicate our red ochre.

We're gonna have more of that. what else? There is a whole array.

In fact, there are many, many examples of these raptor talons a very specific form of neanderthal jewelry.

This is the example from con gr was was one of the first that was actually published.

how do you get hold of the talons of eagles? You've gotta be pretty skillful to be doing that and then what are you doing with them? They're using them as jewelry, using them as rattles.

Who knows? They've got, this isn't stuff you would just get to eat it.

It's, it's stuff that's being used for some form of ornamentation or symbolic.

I don't need you to read all that, but this is just a whole list of places and dates.

Going back to c crap, Croatia back over 130,000 maybe.

and per coming through to the, the latest, latest part of this neandertal, golden eagle.

Yeah, golden eagles swans owls.

this, there's something about this, this is a bit like male trophy display.

You know, I'm such a skillful guy that I've got these raptors to show off.

Yeah, that suave Neanderthal from FNI was obviously with his raptor clause.

but there's also the beautiful cosmetic kits and pigments that have been found for Neanderthals.

This is lovely Eva. This is southern space.

Are these moia, so in Spain, Eva Anton, the cockle shell with orangey pigments, these perforated shells.

Now these are the similar looking in many respects to the African shell jewelry in many respects at the time they were found dating in a kind of phase 45, 50,000 that seemed to be Neanderthals before modern humans would've got there.

But we're gonna talk again about the dating on that because it's not as obvious, right? That's the beautiful Cueva Anton one, the rc I mean this, this is an incredibly sophisticated cosmetic kit, this cueva de es, with these little horse bone applicators like applicators for cosmetics, beautiful ochres pigments and, and different colors.

Yellow, a a royte yellow, which is a a a pigment.

It, it just isn't used for anything else except, oh, that's the, it that's the, it is because at the time it was published it was like 50,000 some people, oh no, it's modern human.

Probably they've redated it to a very significant date of 115 to 120,000 and I'm sorry, it's not modern human. Yeah and what's more, that this is about as the dating it now carries, makes it older than the lumbo, cave down in the bottom of southern Africa with cosmetic kits in snail sea snail shells very similar, but it's this ne is older than the blonde, okay? That's where that Italian sua of Italian man with his raptor claw come from.

But this is a little, oops, I've got that wrong.

A little snail shell pot of little ochre paint. Nice little.

Yeah, it's so sweet.

more pigments that are black, the black pigments osa come later than the red pigments.

I'm gonna show you beautiful jewelry. Okay? I'm rushing this a bit and this is good time for your main point.

Yeah, I'm gonna try and rush through in 10 to 10 minutes.

I'm going very, very swiftly.

I, we are just showing these datings in Spain coming from North central or Dallas, south Spain.

We're gonna end up at our Dallas.

Um these are dates that it really is a bit far too early.

If these dates are correct, it's far too early for homo sapiens to be doing this as a sophisticated imagery and hand stencils the famous Gorum hashtag.

Yeah, some people have some doubts about that.

We'll come back to that. So let's just, go back to applying.

You know, the, the main thing about female cosmetic coalitions, the main way that people can try and gun our theory down is saying, well if it applies to homo sapiens because of our large brain sizes, wasn't it applied to Neanderthal? They've got just as large brain actually even bigger possibly at some stages and therefore the energy requirements are just as much for neandertal females, if not more.

So why doesn't it work with ne Enderol two? Yeah, so the main ev main predictions are, are first evidence of symbolic behavior must be red ochre.

All of this works in Africa and that the time span of emergence will correlate with the, with the very sharp increase of brain size.

Those are the two major predictions.

We'll worry about that one at this time.

So now what I'm gonna do is just look, for you guys, I've got it on the zoom.

This is drawing off Ian, what's work and the work has really correlated to Ian, what's work.

what I'm going to just quickly compare the pigment record of us from our ancestry and Noma sapiens with what we know about Neanderthals.

So in Africa, just like that timeline of Chris string, as I showed you, it goes back at least 300,000 years, possibly quite a bit earlier in Vanderberg in the southern Cape sites.

but it's all over south and east.

There are spots of it that far back.

Somewhere in Africa there is always continu, there's some ochre going on for almost all this span of time.

200 from that time period somewhere there will be, this is despite the fact less archeology has gone on in Africa than in Europe.

They still find more of it, okay, from the time of modern speciation and we know the date, the date is what D Shaka said, 160000 When we published our article 30 years ago, we predicted 160,000 sometimes in says for the wrong reasons.

But we actually were spot on in terms of that date.

Regular ubiquitous usage from our time when we were modern speci spec agent with Glo skulls and flat faces, faces, wherever homosapiens goes on the planet, homo sapiens takes red ochre wherever you go.

That is the record for us.

Our lineage, oops, not that one.

Let's just go down here.

Oh, now little the red oak is there and in fact now with Terra Marta on the Mediterranean, it's actually going back almost the same kind of age as Vanderberg 400, 500 s, possibly 500,000 and it come and there's particularly activity with OCA showing from a quarter million to a 220 that before 200,000 before Bru Cal, but suddenly at the end of after 200,000 big gap, no OK Farms big fine gap.

Nothing going late in the day.

We have a bunch of manganese.

Black has suddenly black, iron dogs.

Sorry, suddenly manganese dogs are not iron.

Okra is iron oxides.

The shuttle peronian neandertal industry has ma is always knee deep in oak.

so very late in the day.

There's a lot of neandertal pigment.

how am I gonna do all this? I'm gonna rush, rush through because some of this is, a bit too difficult to explain just a comparison of our brain sizes, African species specimens, European neandertal lineage specimens, very similar rates of increase.

However, there's a bit of a slowdown for Neanderthals about the time when we are speci at that time, brain size is getting quite large.

The Neanderthal, a bit of this cina around there and they're not very, very large saori or peanut, but they get very large late in the day, quite late.

not a lot of difference of the rates of brain expansion.

we were pretty robust like the Neandertals until pretty late as well.

Okay. just to say something here about the calculations using body size and shape, those, the issues about the neandertal short leg lengths and the needs they have for, locomotion comparative to the big body weight.

Actually Neandertals have bigger energy requirements.

and this is a conservative estimate of from Catherine McDonald's, who is a wonderful archeologist from Leiden, behavioral ecologist from Leiden, who's sadly been lost to us.

She was absolutely influential.

She's conservatively estimate actually ALS might have needed 10% extra energy.

It's not less, more, less energy. It's more energy than us.

Okay. so there's differences of foraging strategy there.

I'm gonna move that forward again, and now I'm just gonna look at the effects.

What if Neanderthals have very strong seasonality in their environment? What's that gonna be? The effect on female reproduction? this is looking actually at Bushman, people in the Kalahari and comparing if they are living from, if they're settled, living on domestic food.

It's a bit, it's a bit like that situation for the Langer monkeys that are getting provisions throughout the year.

Steadily. The reproductive of the birth frequency is really almost flat line with maybe a couple of humps.

If they're living in the bush, then they are very much queued to particular times of year wherein three or four months nearly all the births occur.

This is extremely seasonal reproduction.

That's births, that's a chart of births.

Let's just think about these two charts in relation to what would happen with Neanderthal males in, in this situation.

When most of the births converge over a short period, it's almost impossible for any ne hand atal male to access more than one fertile female a year.

Just not really.

So this supports what we call a seasonality thermostat model.

That basically males are going to be less naughty if they're in ice ages when most of the females are fertile at the same time, they're just gonna be less naughty.

but what happens if you lose the seasonality corralling that reproduction into certain times of year? What happens if your ice ages suddenly turn into really much warmer climates and you have the prospect of much more food available at different times of year? What would then happen? Well, that will be the time period when we expect female Neanderthals might have to think of different strategies.

They'd have to think of strategies like the African the reason the African homo sapiens were doing so much ritual with the red ochre mimicking menstruation would be because they couldn't rely on seasonality, making sure that they all lined up their cycles.

So they had to prevent that.

They had to put up a show for that.

neandertals might have been, that is a paper that we did now over 10 years ago, with, Kosama and Ian, who's here tonight and I'm just gonna very quickly actually, I just wanna mention some of the seasonality neandertal strategies.

you've got it all on the zoom.

I mean, there are, there are seasonality of prey choice, well known.

The extreme variability of climate.

This paper, the winter stress nursing paper of Tanya Smith and her colleagues is super interesting is looking at Neanderthal's quarter of a million years ago in the Rome Valley, able to analyze tooth stress patterns, dental stress patterns on very young, a juvenile Neanderthal who lived through to weaning and weaning time.

Basically, that infant was born in the spring, weaned in the fall two and a half years later, and didn't then make it through that winter.

Okay? So they can tell that from, it is pretty remarkable.

They can tell that the things that are coming out of that are that, the inter the weaning time is very similar to what I know from Hud hunter gatherers, really similar two, two and a half years till weaning till the mom is that that juvenile has to start feeding for themselves, feeding on solid foods.

And, and then, um that that's the biggest time of stress.

and, and the timing of birth spring, early summer, because that will then give a good supply of food available for the breastfeeding mother wean in the fall.

Because in the beginning of the winter, there'll be some fat in the animals, but then of course it gets very lean late in the winter before it gets through.

This is telling us about seasonality of neanderthal reproduction.

250 is just about the time when it switches from one climate to another.

There is also terrible stories about those early APU Neanderthals suggestion that they, they are riddled with rickets, their pathology because they are living in late in an ice age conditions and probably not getting no sunshine.

No, no foods during those winters that that will get 'em through.

They're almost semi, they're suggested they could be semi hibernating and its particular stress on the pubal early adulthood, particularly the pubal, age, which is why we have such a high mortality rate for those pubal, remains at, at awe.

This paper is particularly of interest, A recent one.

This is an important bit.

Very recent paper looking again, I've said that the neandertal child from the Rone Valley had a weaning period, almost the same as hu hunter gatherers might.

Here is a a an example of examination looking at the frequency of dental enamel hyperplasia, stress, stress, stress marks in, growth disruption that indicates very early life stress in a big sample for Neanderthal and upper paralytic juvenile dentitions, young, children's dentitions and they have particular species specific patterns here with childhood stress coming out differently in each population.

Both populations have stress at weaning, but what happens with homo sapiens, they recover after weaning.

Whereas for the Neanderthal child, it is a battle afterwards, it gets worse.

They chum through it if they're lucky.

So there's a difference of pattern.

Now, I'm gonna make the bold suggestion.

This is quick and a bold suggestion that what they, they have said there, what, what they actually say from that paper, and with which I would, I would tend to really agree these differences reflect differences in childcare or other behavioral strategies and my immediate thought about the difference in childcare is that Neanderthals may lack the support of grandmothers, because I know well from work with the hazer neander, the grandmothers among the hazer are highly important in the support of children who've been weaned and they kind of take the strain by providing very regular staple foods among other things.

neandertal grandmothers maybe much, even though we saw Shaar was potentially in that pattern in, in the late glacial European circumstances.

We can see in the genomes from Neandertals in Spain, Neanderthals in Siberia, there is a tendency of female neanderthals to leave their groups and start in another group while males showing off their raptor claw technics tend to be relatives.

Neanderthals is tending to show petrol locality, males related female strangers, adult female strangers.

So where is that maternal grandmother? She's not there. Why? Some of the reasons why females might want to get outta those groups.

One, if there isn't a mom to help them to stay behind for why stay behind the other is the potential risk, which has been shown in some of the nial genetic evidence that there could be a risk of incest with a quite close male relative.

That is one of the main reasons why gray tapes, gray tape females leave their groups and there's a very recent interesting model, by de Ani suggesting early reproduction by Neanderthal females is slow.

It only starts to pick up later as she gets older.

That would be following this life history pattern outta the groups.

Move somewhere else. Establish yourself, right? So this, if I can go on to it.

Oh God, This is, well, it's something interesting and significant.

I'm sorry if it hasn't been exciting so far, but I, but everybody's been excited about this Celtic Matri.

Hey, wow, fantastic.

But meanwhile, I was saying, Hey, but have you seen this other paper that went alongside the Neandertal Human Admixture timeline? This paper of the Zun lady from church.

This is the population African Explorers discovering and opening up new continent of Europe 45,000 years ago, leaving a trail of a special techno complex that went all the way to the Torque Riviera Kent's cavern.

They st they had a holiday in Torque Riviera.

These are the tools from Pave Close.

Anyone can pronounce that close by and ran, to Ranes and Laun are within like 200 kilometers of each other.

I wanna do that as a pilgrimage.

Walk across that landscape of step under from where she is to where the Ranes people, why it's so exciting is this is the first, these are the oldest homo sapiens genomes analyzed with high coverage and the first time they could pick out what is the sex of this individual and how related are these individuals? So for the, so I was getting my heart and my mouth, I was getting jittery.

Oh my God, they're gonna bust our model to totally to pieces because if they show Hermo sapiens is like the NALs is petrol local.

Oh my God, it's gonna bust us.

But they couldn't, they didn't.

I thought, yes, it doesn't support petrol locality.

It gives the opposite pattern.

Now, I've gotta be really calm about this because we are talking about six people in Ranni lady, seven people in all, it's not a lot.

Three females at Ranni in South Germany.

I ho three males. The three males are not related.

The three females. Oh, oh.

But it's not, but it's, there's a mother and daughter and then there's someone who's like an maybe an aunt three removed, something like that, and the male's aunt.

So it's like the opposite in yal pattern.

The female show relationship, the male is a stranger.

It's latty corn lady who's a bit further back down the road is maybe three generations earlier than they are.

She could be remembered like a great-grandmother or something.

and she's related to the females, not really.

So it's, now this isn't clearly match locality, but what it could really look like is what would be the demography for African hunter gatherers and we gotta remember, these are African origin hunter gatherers.

This portrait by Tom Lint of this lady is absolutely accurate in relation to her Gino, they're African origin hunter gatherers.

They're carrying something traditions from way back.

and so this could be multi local, which is what African hunter Gallers do.

They're multi local. What multi local means is that early for a girl's reproductive career.

She stays with her mom, mom's grandma, mom helps out with those cute, those offspring.

Those offspring, okay? They have stress at weaning, but grandma's there to help them through.

Alright? they have bilateral links, pathways to relations through father through mother.

They make any links. They can heads are as superb.

But this use their names lots of different ways to find all sorts of different kinship pathways.

That's what they do. They have bride service where sons-in-law are coming from other groups and the mother, their mother-in-law is the boss that's typical African hunter gatherers and my guess is that snapshot of the demography of Ron and SLA is showing something like that, that if you did the same kind of thing with burials of local African under gather groups, you'd get something like that.

One thing for sure, it is not petrol local anyand, were pat local.

We, well, we're not, we are sure that there is some evidence for it.

There's a little more evidence for that with Neanderthals than we've got here with Ranis.

Alright? my very, I'm really, really sorry about this.

I, I can't, this whole lecture needs to be two lectures.

I'm just gonna show, okay, I put up a model, yes, because I've, I've had to talk about that patch locality aspect, but it's bloody important.

I've put up a model in the ice ages.

Neanderthal males would've behaved themselves been but in the interglacials, ooh, they could run around and the Neal females suddenly had to do something.

So this is, this is just showing you, these are the results.

The of, of those predictions.

black is the interglacials warmer phases where you can see that gray comes over.

White is the glacials white with ice? Okay, where are the ochers? Okay, bang. Okay.

This is an early case, probably Terra Marta may come here.

The brs are early, these are early possible.

But Terra Marta probably is really here or here.

MAs Belvedere. These cases, a bunch of cases from Holland to, Germany and, and Cheche again, these are good for definite cases of red Ochre use again, interglacial and it's a cluster here in the Interglacial Interglacial maybe, or maybe there.

So even more IS seven, Marine seven and then this mysterious find gap in this deep cold phase and look, 160,000, that is the age of symbolic revolution with homosapiens.

This is concurrent with that and with suddenly lacking.

Now, the mystery there is al because Bruel really looks like they've gone into some symbolic domain.

But Bruel comes after this cluster of ritual activity when it is actually a relatively warm blip into Stadia.

So it's like Brule has been built up to by whatever's happening here, suddenly they've gone to something interesting and then it disappears.

It goes, it's gone.

It's like they got it started and gone. Yeah.

Trying to stress something because a good scientific model makes predictions is testable and had oca been found in the wrong period, in in Lacs rather than Interglacials, we would've been proved wrong.

So it's very risky to do what Kain did. And with Ian, Well, Ian and Vol, we put up the model. It's said, this Is where the OCA should be. That's right. You know, and if it, and we only need one or two examples in the wrong place If, if it's scattered randomly between the in glacial.

So there could be other reasons like archeological visibility, but we accounted for some of that.

and this is the most recent part.

The, the late OC scene.

Well, the lake plie toine, well, there's a bit here that I just wanna say something.

The t pla warmer. The peal warmer.

We could track through peal and conal in terms of layers, archeological layers and climate, climate indicators.

when it gets down here, shadow p perian and the pe mysterion, lots of manganese as the black stuff.

But manganese can also be a fire starter.

So as manganese was always turning up in the very cold bits, that's not so surprising.

But it's really becoming a colorant here and a shackle Permian, lots of oak.

It looks like here things have broken away from environmental determinants, whereas we are seeing much more sort of climate, driver in the earlier parts of it.

there's just one little point to make is about, you've heard of the hippopotamuses in Fargo Square 125,000 years ago, because this switch from six to the early part of Marinas to stage five knowns, Ian Glacier interglacial, that obviously would be hugely confusing in terms of what is going on with seasonality, reproduction and so in our paper, we were scratching our head and saying, why isn't there more to show for this? Why doesn't that drive it? Why doesn't that pick it up? You know, we were saying it should do and then after the paper was published, we started to show that this incredible cosmetic kit was actually dating to that particular time period.

and ahead of the game of the blombos beautiful homo sapiens cosmetic kits down in the Southern Africa.

There are other examples too, from c there are examples made by Deni Sos, but I'm not gonna go into that.

oops, the last thing, okay, I'm gonna end up here pretty much, I think I've said quite enough.

The last thing, Les, where's my phone? This installation art by Neanderthal 60,000, more than 60,000 years ago in Spain with amazing red pigment.

What do you think? Any of that? We have no neandertal informants.

I'm just gonna end with a little bit of thought.

This is not scientific at all.

It's just what I envisage from this.

This is, songs from the awesomely powerful ancestral, A Women of Central Australia song says they are menstruating.

Their flanks are wet with blood. They talk to each other.

They make a bullroarer. They are menstruating.

The blood is perpetually flowing In any aranda myth, a elk naer can be recognized by the fact she's constantly decorating herself with red, oka associated with water and was presented as menstruating copiously.

The women are like men with bullroarers and they have solidarity invoked in one song through the image of a clump of bushes so thick, so pressed against each other.

They cannot move separately.

The central Riner women, central Australian riner women, they, they are known as women who refuse men.

In fact, it means eyes turn away.

Another song says, they say, I won't go with you.

I will remain an tna. Richer. They were their borus.

They stay where they are, they sit very still.

The man wants them to say, I'll go with you.

But they remain where they are.

I don't know what that means.

So that's just a, a divergence of strategies.

Philandering males, the Trump model of philandering males targeting menstrual females, non cycling females will resist it.

The ways to resist it, if the environment forces seasonal reproduction, try and just hide menstrual signals.

Don't big them up. That will be Neanderthals in the ice ages.

If it's non-seasonal reproduction, you gotta mix it up and confuse those menstrual signals and not let the Donald Trump males know when it's happening.

That's why menstrual surveillance in the ni United States with Donald Trump as as president, is something not to allow modern equatorial and yeah, equatorial Africa, our ancestors in Africa would've done this and Neanderthals would've started to do this.

They would've started, stopped, started stopped, because of those glaciations.

It's like it took them a late time, a late period to actually get it all going.

So to sum up, the reason we're all here is because in our case, our grandmothers discovered that the panel, they know.

Yeah. And, and they could continue.

They, they got it on a continuous trajectory.

Whereas Neanderthals would kind of chopping changing, chopping, changing, Reinvent the wheel, Having to reinvent the wheel, and therefore, and with, with the possibilities and then they climate change.

They lost all and had to start work again With the possibilities of, patch locality and a certain level of male control there.

made life harder for them demographically.

Less support for those babies, more juvenile stress, more More male dominance.

Women having to be where the males are, not where their own mom is, therefore the poor kids don't.

Yes, their maternal grandmother, That kind of thing would be it That led to extinction a lesson to us all.

Anyway, okay. Question.

Any, any questions, Erica? we've got Erica, we've got Lex, we've got Kevin.

Sorry, the microphone's on.

What? Yeah, yeah, yeah. I'm so sorry. I'm so sorry.

Speak well, where is the microphone? So sorry guys. Ca are you listening? Are you able to hear? Sorry. I will do. Couldn't get up to the have to make Zoom people see where, what's Happening. I'm trying to get this view onto a gallery. Sorry.

Right? Yes, please, please. Or I can tell What's the, I just wanna clarify for myself and maybe for others what the, the, the lead, the step in the argument is about.

It's just a small thing really. Mm-hmm. About seasonality.

I totally get, and I, I, by the way, I think I understand, so much better now.

A lot of the, the arguments about the cosmetic coalition and everything and three lectures and anyway, great stuff Could Be. Yeah. But my one little thing I'm picking

on is, because I understood very well the steps in the argument about the red line and the menstrual synchrony and the symbolic action on that level.

But what is the step in the argument about seasonality of reproduction? There says environmental forces, seasonal reproduction. Mm.

Can you just say just, just a small thing about what you take me for? Granted, it's obvious to you, but what, okay.

Like that spike, like, yeah. Okay.

When there's seasonality, you don't need it. When there isn't, we need it.

We've got how, why? Just put it again, the, for a, if you've got reproductive synchrony, a male cannot go from one female to the next female to the next. Why Do we have reproductive synchrony according to seasons? Because of, is it because of food? Is it because, well, for Neandertals, the deep, there would be an incredible rhythm of availability of food, particularly in support of extremely energetic, deep people Don't have sex when they're hungry.

No, no, no. It's about the energetic. It's Okay. No, it's because of food though, right? Like, it'll Be, but it's, hang on, Erica, sorry.

It, it will be because of sustaining the energetic requirements of mothers.

That's why I was talking about the little Rone valley, neander to who's born in the spring to early summer when the mother would've had lots of food coming to her and she could adequately breastfeed.

Whereas by the fall, she weans, That to me would explain why women were clever and have past experience and friends would not want to have babies at that time.

cause they know. But based on the model of gender relations, it, It would seem Erica, Erica, The men wouldn't necessarily care.

No. The the female's bodies will be attuned by energy, levels will be attuned to whether they are actually fertile cycling by availability.

So I showed you the charts of the women who have births going within a few months, a window of a few months, because that is the time of the year when there is food available that gives them sufficient energy to have regular fertile cycles.

They get pregnant.

The pregnancy obviously is gonna be nine months later.

It's, it's related to energetics.

I I'm sorry if that was not coming over clear with The Inuit. That's fine. With the, with the Inuit took quite recently during the long cold winter, the women just didn't cycle at all.

So you have a really, the, the barley does respond.

The bodies of all mammals respond to that actually happened to me too. I Just did.

Yes. Obviously for, for us, in our extremely food affluent society, we it, it takes a, a it's, you are not gonna get many seasonal effects, but in populations all over the world, there will be strong seasonal effects on reproduction just by the availability for female, for women of whether they get that that's what it is.

And, and with Neanderthals in the ice ages, nevermind Deni so's out in Tibet and Harbin and so on.

This would be an extreme seasonality.

that that's why, that is why so Helpful when Yeah, no, that's the number one questions.

Absolutely. No, sure. I was too rushed through.

Yeah, yeah. I was too not able to Period then.

Well either you can still have a period, but not ovulate.

But then if you are really under suppression, you would not necessarily have period, you, I should be aimed men real, which happens to female athletes sometime if they're under so much stress, energetic stress.

So it is a matter of energetic stress, really.

and there's a lot of biology work on, on that area to, to show for it.

Yeah. Lex, you were going to, Kevin, I need your help with some of the genome stuff, Kevin.

Yes.

I'm just wondering, do you have any idea of how the female cosmetic coalitions strategy spread, like, was it word of mouth or did they all themselves, This is a great question for Pan Africa.

So the question for Zoom was how did the female cosmetic coalition spread? gosh, that's a hard one.

We, we really have, the picture DKA that I showed earlier is giving us the picture of these indicators of Oka in North East, South Africa, start South Ian is pretty strong.

Ian can maybe help if he's here, pretty strong about, Southern Africa being really cutting edge, but Southern and East Africa.

Now when I'm showing that the males are kind of looking at that line of females, those males have kind of come from other groups.

and, they, they would be coming from other social groups.

They're ch there's gonna be a sexual selection effect where the males are choosing those cosmetic females because that is good for the vast majority of the males.

It's not good for the Donald Trump, male Trump, but it's good for the vast majority of the males.

So what you're gonna get, what is driving that explosion is actually a mutual sexual selection thing, where females want the males who are ready to do some work, and the males want the females who are doing this cosmetic strategy that starts the symbolic and starts the moral domain.

So you're gonna get a ge a speciation effect of sexual selection.

That is my Darwinian answer to that.

It'll go by, but I think it's an important question because we are trying to say that this could have started in Neanderthal Europe, quite autonomously and independently, and it could start in different parts of Africa quite autonomously, independently.

What is driving it is the ence, the pressure on females of the energetic requirements of the larger brains that's driving that.

They're coming to similar conclusions at similar time, but Neanderthals in their environment are doing this stop, start, stop, start.

Whereas for Africans, suddenly it, it, it does build up in many parts of Africa and then at that magic date moment, it kind of all joins up and something magical occurs with some kind of spell of red Re.

But it's a really tricky question to answer.

I don't know if either Ian or Chris could tell us more.

Once you get to the 160,000, do you Wanna revenue speak here? You Wanna speak? Which we think of, it's like women saying no and signaling that no, like our body to sacred no means no in blood and that, and of course one word for that is sex strike that, that is intrinsically trans.

There's no point being on strike one little ality and then the other women over there are not on, because obviously the males are very mobile.

They just, they'll pick where they'll, they'll exploit the fact that women are out to synchrony.

So the way to make, to make that work is to use the moon, isn't it? Is to say, right, whenever the moon's dark, we're all saying no and then that, that is already, that, that's intrinsically the word ask use is transracial.

It just cuts across boundaries.

If we could find that out, you can recreate.

Oh, I see what you're saying. Yeah.

I don't think word of mouth is necessarily the way round to put it though. I think, I think, I think it's, it's about examples, participation in ritual.

it, it, it is, rhythm, getting a, a rhythm of ritual in relation to Luna Cycle.

But perhaps sort of word about in the same of really good singing is very confl. Singing.

Singing. And part of that, I think the way Jerome would put it is this Rome here.

Yeah. This song is incredibly contagious.

Everyone wants to sing it, and it somehow you hear, you hear it, you hear it, you echo it, or it's all over the face.

I think I'd rather, I'd rather have the singing the contagious idea than using sort of speech and sort of trying to persuade people.

I don't, I think it's more like, yeah, With hunter gatherers, imagine it's Happening and it, and, and the magic spreads With hunter gatherers.

I think that's our model for communication.

But of course, but Hunter Galleries, as I was talking about, those, those people that El j el I should say the Ian, Ian Ian tech complex that spread across Europe, which laun and Ranes were part of.

and they that that's a population where they would've been trying to keep their links to the idea that there's warring armies.

Are you joking? These are both Neanderthals dwindling populations, those LRJ people who are not ancestors of people to today.

they need to keep links to any group.

They can, they do this bilaterality, there would be ritual as ways to maintain those, those groupings.

I mean, that would be what it would be.

Kevin, you had a question then I wanted to ask soon. Yeah.

So thank you. That is such, so the thing that still puzzles me about the neander ones is, in the human model, how the, the women basically get the men to go and hunt mm-hmm.

Partly so that by cooperating amongst themselves, and that gets off the ground more easily if you mostly related females living together in the same place and that seems to be missing in It does.

So I wonder in the neander cells, is it possible that in the war periods they actually are, maybe They're trying, so, So that, but so do we have, do, do we know these little scraps of data about sort of natural local, natural local in the avatars? Do we know where that sits in the place? We have two examples of genome analysis that gives a picture of patro locality, but we can't that is so difficult to get populations where you get enough information on that.

One is in Spain, one is in Siberia In the war periods, or the, Well one's in Siberia, one's in Spain.

No, they're, they're both in recent, like the last 50,000.

I think. I suppose If, if you Say I, I don't see, I Kevin, I doubt somewhat that they would be switching social structures.

I know so much. It's strange.

But It would, because you could still get, because Yeah, I, I'm not gonna try and pursue that.

Really. You could still, there is no way that it is true that women who are not relatives of each other cannot do ritual.

I mean, I've done talks on the African traditions of rituals of rebellion and some of the most impressive rituals actually organized by women who do not necessarily have ma local matri learning relations.

That, that's interesting because, because you need the ritual even more if you are not relatives.

Yeah. You need it even more is just that, as you say, it's hard to kick it off.

Yeah, it's hard to get it to roll.

Whereas what happened with the Africans was they got it to roll and, and they were supporting the, those weanlings in a way that the neandertals weren't.

One of the ones I would always stress, of course, is that in central Africa, the moon is more important than the sun in the center.

Great. You, you get seasons, but there might be three or four seasons, raining seasons, dry seasons, but you don't get like summer, winter in the way Thes would've done.

So you can argue that way. You have extreme seasonality.

The suns your clock where you have minimal in central Africa, the moons changes are much more important and therefore he's in with the with the, with the, with the nar synchrony of the menstrual cycle.

I've got Chris, Ragger wants to ask something online and then I'll come to you guys. Yeah. Ragger.

Oh, hi. Thanks Camilla and Chris, it's lovely to, hear your voices and everything.

That's a long time. anyway, I'm thinking of the act of birth, giving birth and how central that must be to the mother and child.

Yeah. And other people.

It must be a ritual in itself of a, a kind of sacred, very deep, mm-hmm.

extraordinary experience.

So people want to come in on it so it would, everyone in the group would feel pulled to, honoring this event.

So I, I think that, we, we, we need, if we're learning something to understand how it would be to have, a, a baby that's, covered in blood and, we, we are involved with the blood.

It's part of the, the event and how that is must be licked away.

Just like all mammals.

I imagine all mammals lick away the blood and I, I think it, it would be wonderful to explore, other, other animals in that ritual of blood, of blood and birth and see that it is our right as, humans to be able to, tolerate that.

cause we, we, we don't, on the whole, Not sure the males would've been allowed anywhere near the childhood.

No. We dunno that, do we, Chris? We dunno that.

No. Well, we, we know a little bit about African hunter gatherer, birth practice and, some of the people here, if Jerome's here in Ingrid's here, that they would be able to talk a lot about Central Africa.

with, Quai, for instance, Kalahari, a woman will make a choice to give birth by herself almost.

Mm-hmm. And it's pretty remarkable.

and there may be some powerful reasons for that.

We also have examples from, in which childbirth practices where a child may not be named until that child has kind of been brought to the group and the grandparents may do the naming.

So a lot, that is an extremely 400 gatherers.

This is an extremely difficult time, a dicey time with the question of the child's survival there.

Yeah. So I can I absolutely imagine, Yeah. That, That in this situation, the under-told groups would've been in of really dwindling stressed populations.

The birth of child would've been of enormous, enormous significance.

Yeah, that's what I think. Yeah.

Yes. But, and it would've been precious and they would've wanted to participate in the rec welcoming. Yes.

But I, I think it's a little unlikely that males were necessarily anyway near that until there will be a stage process.

But, but maybe This is, this Is an area of speculation. I haven't got.

Yeah, may, may. Maybe this is how we learn to love physically. Love. I Have a quick, quick, quick intersection.

Intercession, just wondering, have there been any mother baby burials found from Neanderthal? Or is it only I, because I think there have been home for homo safety.

I think there may.

Oh, we have infant, we have very young Neanderthal burials.

I'm trying to think, oh, I need to silence this.

I'm trying to think of a mother baby one.

They have definitely been some mother baby with, modern human ones.

I'd need to look up more data about that. It's a good question.

Yeah. Just 'cause I was thinking that would give an indication about what the relationship with your mother and baby was at the time.

You know, how, how the there would be some indications with, with if the burial goods or markings or the positioning would give some indication. Yeah.

Surely. But we need more data. right.

I have, thank you very much. Thank you. Thanks.

Do I have Christine and Lady back I that when they started the cosmetic coalition, it, it was something, something that had never happened before and it Wouldn't be when, when you say they meaning homosapiens or neonatals or either Right.

With looking at Africa that Yeah.

So thinking it was a new thing.

Yeah. And I was, maybe it's spread because it was new.

Maybe it was a bit like the internet or something, or cars or Could be, could be.

Oh that's great.

Yeah, yeah, yeah, yeah. But that we were you here last week when we were hearing about Mu Jo with Jerome and Chris Mu Jo being this, mimicry through creating laughter at somebody who's done something obnoxious.

So pegging down somebody who's been an absolute a*****e by pretend by just pantomiming their behavior and getting everybody else to laugh.

Now if we think about what happened, because those little cartoons I put up, this would be happening for erectus too.

The girl who's menstruating is the one who can kind of flash her eyes at the number one male and the other girls who are, or the women who were maybe her friends and

relatives say, try to take her turn and peg two by doing a bit of, oh, but we can too over.

You see, so the beginnings of it could go quite deep time before because of brain size it becomes an all or nothing line.

Whereas in the beginning it could be a bit of hustle, a bit of teasing, a bit of fun and play, and then it gets serious a bit serious or play that it's play war in some way.

But I, okay, there'll be an aspect of novelty, no question.

What's really novel is the behavior of the males in some ways.

How do they respond in some ways? And what they do is whats really novel. yes, Female about was quite old Ard.

Yes.

There, well there is some evidence throwing that there are not very many older neandertal females.

I was fairly surprised by the age range for Genal Z.

there is some evidence from particularly Croatia Carina where they're really, they have quite interesting evidence getting stress, test stress results that talk about possibly puberty, onset menstruation, first menstruation births and they have very few older females apparent and then you think about the whole question of this movement of females from their groups and just the lack of grandmothers there.

I mean there really is, we need more demography of really more understanding of the mortality rates with, with neandertal groups and of females especially.

but it's a very good question.

Ha have we got the real evidence for that support question? Sha Shada ZI mean, she might be at a, a relatively benign time for where she is in the middle up in the north of Iraq.

and it's that population, I mean there's quite a big group there that were buried it.

It was quite a lot going on there.

and whether her descendants were part of the mixture with modern humans, with homo sapiens amazing.

potentially. But yeah, it's a great question.

yeah. Is there anybody else on Zoom? Yes, There are two questions on Zoom from E Emmanuel. And, and, okay. Can I have the one in the room and then I'll ask these ones? Yeah. you Are talking about female cosmetic coalitions.

What about males using cosmetics? They don't, they show, don't, they show the Neanderthals on the hair doing it.

They really show off male neandertals doing it and the jewelry. why Do you only talk about females? Because females would've begun it, but when the males play the game, yeah, they could take it on too.

Say, and also Well the coalition, any, any Coalition could include relatives. If You're a bunch of females needed to stand up against out group males, you really need The sons as my brothers, brothers Could be painted up the same way, I'm sure. Yeah. Yeah.

It's just that I have so much to talk about that, to start talking about that aspect of behavior.

I'm really interested in how are the males who are the, are gonna be got behaving and how does that work? How does that work? But you make Important quite female cosmetic coalitions would've been kind of cross-gender as well.

Not Yeah, not like feminine. Quite right.

Would've been women as quite right.

Quite powerful women with their sons and as backup. Sure.

It would've been a community coalition as much as any It would create, it would go in that direction.

But it has to start somewhere. You can't Have a coalition. It's not against anything.

You can't just have a current coalition of everybody like that.

That's not a coalition.

The coalition has to be let ingroup outgroup.

So you need at least two clans or ties, ? Yeah. We don't have clans and moty as basic structures in the hunter gatherer populations of the LRJ technical complex that is like hunter gatherers and they don't have clans and moieties until they settle down.

Then you might get Celtic matrilineal clans and moieties.

But anyway, yes.

we online, there's a couple more questions then I think we've got to end really, unless there's any vital couple more questions.

Were, So there's a question here from Emmanuel.

Shall I read it or you wanna read it? Where, what is it? where is, it's a little bit up.

The FCC blood relations models implies a 1 1 1 male to female stable bond.

We have evidence of sexually promiscuous societies and partly local intentions in modern Ages. That is not an interpretation of the FCCI would necessarily say, but these females are wanting at least one in early hunter-gatherer bride service groups.

They absolutely insist on one male's work for a couple of pregnancies of one woman that then they're not having, polygeny.

there may well be certain amount of polyamory, but they want, what is the issue is the economics, not just the sex.

The issue is to bring in the issue is that a daughter of a mother is not prepared to be, being f****d by her father or uncle.

She wants to get a new young hunter in there who's gonna do some work for her.

Okay. It's pretty straightforward.

But we need to say the reason why I haven't gathered herself sort of monogamous is simply because it's women are so demanding.

If it's quite, it's yeah. Really hard to keep one woman Happy. Yeah. If you, if if a guy has to do bride service for two or three women, he's having a bloody hard time. Okay.

Then Alistair is asking, I have a question about the lack of grandmothering in Neanderthals.

Did this the past year from the home erectus norm come about because they had less invested home base because they were so much I Haven't got, I really can't answer such a question, Alistair, to adequately.

I can think of a number of reasons why I, I agree that there is like, there must be switch, there must be a reason for a switch back that I would take Sarah Hardy's lead and the grandmother hypothesis lead that, tendency of female, residents.

Female filler was standard for, larger brain homo two times 1000 cc 11, 1100 cc.

But remember neandertals, and this might be true about Denny sva, Harbin Longie, whatever we call it in East Asia, that they're going into very, difficult northern Eurasian climates with the strong seasonality.

They're facing very risky hunting conditions perhaps and if we think about the Inuit, that is where you get male, relatives doing certain level of hunting together.

that's one reason and then if we have difficulties of the females then not living long enough, then what are female then what have young females got to stay for? Maybe it's better to get outta that group and not be at risk of the incest meetings.

Yeah. So be basically Close to the hunter rather than expecting the hunter to come to you.

It it could be some type of thing like that. Yeah.

That's critical. It it's really Yeah, it might be and let's, one important thing about that is if we think of the situation of Neanderthals as dwindling under stress populations and these, um these homo sapiens from Africa turning up in the Middle East, if Neandertal females are used to going outta groups Yeah and end up with hunters from homo sapiens. Yeah.

You can see why they would start to get absorbed. Yeah and that is what Chris Stringer with Lucille Rete.

That's their argument about why did the national natal populations disappear to, well, sort of the Neal women disappeared into the arms of the homosapian skies.

Yeah. That would've happened. Possibility.

I think we're gonna have to wrap this up.

We've gone too late and I really have to make apologies for covering so much.

Thank you very much. Two, two lectures full there.

But the material on the early genomes of modern humans I think is really very, very, it's only a small bit of material.

It's very, very important.

Actually concentrate on that last bit, Which great. Yeah.

Okay.

I'm, I'm just very excited that, that I as somebody who might have, autism spectrum, that I might be more neanderthal than other people.

Okay. Well, I, I'm not an expert on this aspect and so, and there needs to a lot more work, but it is fascinating and intriguing that actually some of those characteristics coming out of autistic spectrum may have had payoffs and not just disadvantage in the circumstances of the intermixture.

So Wow.
That is amazing. Yeah. That could be a bomb.
Thank you very much. And Chris and the rest of the, all people.

Camilla Power
Neanderthals, Homo sapiens and the ‘Human Revolution’ (Seminar)
21/01/2025

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