How to Resist Alpha Males (Seminar)

Camilla Power and Chris Knight

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Chris Knight and Camilla Power ask what can we learn from monkeys and apes about resistance to male dominance? Among machiavellian intelligent primates, just being bigger and stronger doesn't always win. This is not only true with Old World Monkeys who have female kin bonds (e.g. vervets) but also unrelated female great apes such as bonobos and the highly sex size dimorphic gorillas. Critical features are strategies of ganging together, confusing males on fertility, and ability to say NO! What could that say about gender relations and conflict in our ancestry?

`https://www.youtube.com/watch?v=VAQN52Ttpy0`

Camilla: Hello and welcome to absolutely everybody who's come into the room here just amazing to see everybody tonight and everybody on Zoom as well.

I can see some distinguished privatologists here so I hope you'll be able to put us right if we put a foot wrong.

I'm going to ask Chris Knight to say something quickly about radical anthropology, what we are, what we do and how long it's been going.

Chris: Okay, so yes, welcome to the Rand of the Anthropology group.

We are London's longest running evening class.

We've been going since September 1978, which I'm told makes it 47 years.

So we should be in the Guinness Book of Records.

It may possibly be the world's longest running evening class, I'm not sure.

Certainly London.

Anyway, radical anthropology.

The word radical is closely connected to radishes.

It means we get to the roots of things and the roots of what it means to be human, perhaps I should just say, that anthropology as such We only address one question.

What does it mean to be human? And we get to the roots of that.

We try to get to the roots of becoming human and of course, there are several ways, different ways of approaching that question.

I mean, we all are humans, so we've got a sort of vague idea properly what it means.

But of course, to scientifically capture what it means to be human, it's important to kind of fix, work out where the borderline is and what is it to be not human or not quite human and what is it to be pretty much human and maybe even fully human and we can look at what it might mean to be a gorilla or a chimpanzee.

Chimpanzees, bonobos, gorillas, they are human, almost, perhaps not quite human.

So it's interesting to work out from a primatological perspective what it is that makes us in so many ways different.

So that would mean going across to other species, other kinds of great ape.

Technically we're a species of great ape, of course.

Or we can move across time and try to work out here, imagine what it might have been to be a Denisovan, a Neanderthal.

a member of Homo erectus, for example.

So that's another way of approaching the question of what it means to be human and finally, of course, there's just normal, if you like, social anthropology, looking at all the different ways right across the world there are today, and perhaps in the recent past, of raising a family, worshipping the sacred, forming a kinship system, organising production, so many different ways and it's actually rather important if we were to be scientific to try to escape the assumptions that everybody, you know, is like us, everybody has weddings, marriages, nuclear families, hierarchy, male dominance and all the rest of it.

So to get some scientific perspective on what it means to be human, it's important to look beyond those boundaries.

Right, how to resist alpha males is the topic this evening.

Jerome Lewis, who teaches here, and I have recently finished a book called The Revolutionary Origins of Language.

It's being published by Yale University Press and should be out about this time next year and at a moment I'm going to be kind of quoting a few bits from one of the chapters called The Chimps on the Other Side of the River.

So I want to put that in context first.

I was mentioning that our topic as anthropologists is what does it mean to be human? And there are people who assume that there's a thing called human nature which means kind of that not even, no kind of legislation, politics, not even a revolution could change human nature.

You're always going to get rich and poor, you're always going to get male dominance over females, you're always going to get hierarchy and conflict and competition and wars and so it's important to look at the past to find out whether those things are true and in particular, an interest we've always had in RAG concerns the dominance of males over females and it's often assumed that because we're great apes, we're very closely related to chimpanzees, and because chimpanzees actually in the wild have very extreme forms of male dominance.

That's kind of natural because we are sort of chimpanzees, certainly apes closely related to them and in the chapter that I'm going to be briefly talking about, the chimps on the other side of the river, we're looking at an equally close species of chimp, the bonobos, where actually they are matriarchal and so, and it's only recently, relatively recently, the last 30, 40 years, been understood that these are just as valid a model for humans, obviously ancestral humans, before we became fully modern humans, going right back to earlier hominins, just as common chimps.

So, Camilla, can we have the next slide? So now, this is a horribly boring slide.

I'm really sorry about this.

Rob Foley and Claude Gamble, Social Transitions in Human Evolution.

It's about what's called the normal chain of causality from the environment.

Animals adapt to the environment, so as the environment changes, the animals change their behaviour and eventually, as the behaviour changes, all sorts of other things begin to change, communication, cognition, and so forth and the idea is that the starting point is the environment maybe undergoes some change, or the population moves to a slightly different environment, and then that alters the way in which the animals arrange themselves across the landscape, and that in turn reaches a...

Sorry, that's the wrong slide for the moment.

We're going to...

What they're saying here is that...

you have what they call the classical causal chain.

So first the environment changes, then the animals map themselves onto that environment to maximize their ability to make use of it, and then that in turn has effects on social relationships, and then obviously that in turn has effects on the way that they organize themselves, they think, they communicate, and so on and the classic model says that females drive evolution.

Certainly female primates drive evolution in general and it's important to make a distinction here between dominance of one sex or the other and whether one sex or the other drives evolution.

Because even when males are dominant, this is the idea, and it's a very good idea, even when males dominate females, it doesn't prevent the underlying fact that nevertheless females, the way they respond to environmental changes, they themselves actually drive evolutionary change and the reason for that is because females and males always have divergent, sometimes conflicting strategies for getting their genes into the future.

So females, mothers, once they're pregnant, once they're nursing, not going to be so interested, I'm talking about primates here, not so interested in sex as in making sure that the babies they've got, relatively few babies compared with males of course, make sure they've got enough food to be able to be kept alive.

So when the environment changes, it's the females first of all who map themselves dispersing, aggregating up in the trees, down in the ground, moving so much each day.

The females make those decisions, whereas the males aren't so much interested in food because they can carry on having more babies by finding another fertile female and so the females map themselves in a certain pattern and then secondarily, Whether or not males and females have dominance is another issue.

Secondarily, the males map themselves onto the pattern pre-established by the females.

However, I made myself clear.

Yeah? Right.

Well, amazingly, Foley and Gamble, this is 2009, they said, yes, that applies to all mammals, basically, and certainly all primates.

But there's an exception.

With humans, females don't have that agency, if you like and the reason being that with humans, our ancestors moved to environments where there wasn't much food that the females could gather.

They were maybe in a hot, dry savanna.

Man the hunter was able to hunt the meat.

The females couldn't do that.

They had to rely on the males to provision them and so because the males now had control over the resources, the meat, all that normal causal chain was set into reverse and so throughout evolution, males have dominated females and the whole causal chain has been reversed.

So I'll just read this.

Distribution of resources.

controls distribution of females and their reproductive potential, determines distribution of males in terms of access to treatment.

That's a normal model and then the human ecological uniqueness, closure of the classic sociological cascade.

Humans, right from the very, very beginning, the beginnings of males beginning to hunt, reversed it because males now control distribution of resources and I'll just read this out.

The classical model of socio-ecology, which owed to the different costs of male and female reproduction, females are more strongly influenced by resources and males by the distribution of females.

During the course of human social evolution, the increased ability of males to control resources has led to a closure of the cascade model, with males exerting control over female distribution through the control over resources.

So is it fairly clear what's going on here? This is a very influential paper, it is a dominant idea that the normal primate model that females drive evolution has been put into reverse.

Of course, this assumes that the females move from regions where they could form coalitions, they did have access to their own resources, they did have some coalitionary leverage, they could actually use their control over resources to have some agency, it assumes that females moved into areas where they lacked that and the usual idea is, of course, that we started becoming human, including becoming bipedal, stopped crouching on all fours and moving like chimps, chimps do, maybe knuckle walking, and began moving upright.

The idea, the classical idea was that we moved on to the hot, dry savannah, and that meant that we had to run quite fast and it led to upright gait and then having your hands free and then being able to go hunting and then bring back meat to the females, all of that.

Okay, next slide please.

Now, what happened to the chimps about a million years ago is that a small bunch of chimps crossed over from the north side of the Conga River when the river pretty

much dried up to the south side and these, they're not answers to ours, of course, they're chimpanzees.

Our answers, you'd have to go back a lot further than that to find the point at which we split off from the other great apes about 7 or 8 million years ago and became hominins.

What happened just a million years ago is that these chimps moved to the south side of the river and found a kind of paradise, because south of the river, There was these wetlands and very, very rich resources and Richard Wrangham, perhaps the most well-known authoritative primatologist of our time, he argued that this gave us the initial kick to bipedalism.

Basically, these chimpanzees, in order to find food and forage, they had to not drown.

when they came across some water.

Common chimpanzees are hydrophobic, they hate water, they panic and they drown easily.

These chimps, because they were living in much more fertile wetland regions, became very comfortable with the water and of course, the water meant that you had to wade, it lifted up the body and the idea here is that the initial kick to bipedalism was living in these kinds of environments and I'm just showing you these different pictures.

It's just whenever you look at most of the regions, they're similar to these kinds of regions.

So I want to now make an important point.

When resources are scarce, so take the chimpanzees that were studied by Jane Goodall, her student was Richard Wrangham, Gombe Stream.

When resources are scarce, Females don't want to have too much food competition.

So with common chimps, not too many resources.

Each female wants her own little cabbage patch, if you like.

She resents any neighbors, any immigrants coming into her area.

She pushes them out, maybe threatens their babies and so the females are scattered and isolated, enabling the males to monopolise control over a whole range of females.

Okay.

helping to explain the severe male dominance of common troops.

The females just can't form coalitions because they kind of don't like each other, they feel in conflict with each other.

Once they'd gone south, a small population had gone south of the Congo, suddenly there was no need for females to keep apart from each other and they could quickly form coalitions foraging together and with those coalitions, they were able to exert leverage on males and now I'm just going to end up.

I've got about five or six minutes left.

More ten minutes.

Okay, more.

Right.

I'm going to end up with some quotations from the chapter in the book I've written with Jerome Lewis called The Chimps on the Other Side of the River.

Nothing can arouse the fury of a bonobo mother more than a threat to her offspring.

So one of the reasons why selfish gene theory is so important.

I mean, by the way, all Darwinians nowadays are selfish gene theorists.

It's just a gene is a molecule that replicates itself.

It's nothing to do with selfishness, it's nothing to do with Margaret Thatcher, you know, celebrating private property.

But what it does do is it differentiates.

It leads us to expect different strategies by the different sexes and it's very, what we frequently find, what we wouldn't find in, for example, Prince Kropotkin's book, Mutual Aid, we wouldn't expect within a model that everyone's cooperating, nature's lovely, culture's horrible.

That's not quite what he said, by the way, but the idea that nature is basically mutual aid and cooperation.

You wouldn't expect this thing called infanticide.

Infanticide is unfortunately very prevalent among many mammals, but in particular among primates and any idea that somehow we humans would enjoy living in a state of nature, I mean, a chimpanzee social group is very full of tension.

Males often attack females and coerce them, maybe threaten their infants and the female chimps can't be very much about those things.

But with the bonobos, because they can form coalitions, they can support each other.

So we have what's called the offspring defence hypothesis to explain the relative matriarchy of bonobos.

Female resistance during fronticide is the factor which makes them so powerful, the females so powerful.

When a male even vaguely hints at threatening an infant, the mother will immediately turn up but she would be supported by the other females, something which wouldn't happen with common chimps.

So unlike Gombe chimpanzees, bonobo mothers will rush to defend one another against danger to their offspring from any source.

Should a bonobo male threaten a youngster in his own community, he would be risking ferocious retaliation and perhaps get quite severely wounded by one of the mothers and so according to this hypothesis, very influential hypothesis these days, but no males, well aware of this danger, they carry favour with the females by putting on a show of friendliness and playfulness towards their offspring.

So there are two little incidents here to illustrate this.

One, a large piece of fruit fell down close to a large adult male.

An infant was nearby, watched by its high-ranking mother who was some distance away.

As a fruit hit the ground, the male didn't touch it, but he screamed and ran off.

He didn't want to tangle with that watchful mother.

Another little incident.

Having cornered a large cluster of palm fruits, an adult male was waving his arms to scare off a group of youngsters.

He's obviously old bonobos, looking maybe a bit like this.

But then a two-year-old infant approached, and the male rushed off in fright.

This apparently terrifying infant sat directly in front of the cluster and began slowly consuming the fruits.

It's watchful mother was exerting her influence from 15 yards away.

So with no sign of fear, but no more infants and juveniles, they're very confident and playful.

Often when they play, they interfere with, maybe hit even, the adults and the adults were astonishingly tolerant of these games, which means that the games which with the playfulness which with common chips begins to tail off as the animals become sexually mature, with bonobos they carry on into adulthood and sometimes the playful bonobos are so, their play is so exciting and so contagious, the whole community, adults as well, are involved in the games and so what's happening now is that infantile features are being preserved increasingly into adulthood and so when a wild predator, a wolf or fox and so on, when those animals are domesticated by humans, evolution results in delayed development, the extension of juvenile characteristics into adulthood.

reduced canines, increased gracility, having a more grey, slender, perhaps less muscular, large muscular body and bonobos differ from chimpanzees in just these ways, leading scientists to view them as in some sense domesticated and in the bonobo case, by common consent, you have a domesticating agency.

How are the males, bonobos, getting domesticated? Who's doing the domestication? Everyone agrees it's the females.

So the fact of driving the whole process was female choice favouring tolerance and playfulness in males.

But too often when people talk about female choice, they don't follow through the logic of it what this implies.

Female choice means that every female has the possibility of saying no to a male approaching her who she doesn't want and she must be able to signal no to that male, that unwanted male approach, without fear of being coerced or raped in response.

So among Gombe chimpanzees, these are the ones which Jane Goodall studied, females can't domesticate in males because violent intimidation denies them agency.

Adolescent males systematically attack and intimidate adult females, upholding a social order in which every male as he comes of age can beat up and does beat up every female, including his own mother.

This doesn't happen with bonobos because females are well organised and they wouldn't, they would retaliate and it was bonobo females' ability to form coalitions and fight back which drove the domesticated process.

In other words, the abundance of food enabling the female bonobos to forage together led to them forming bondships, friendships, led to them having coalitions and in turn being able to actively select which males they wanted to have sex with and which males they didn't, they would refuse.

So bonobos retain their mischievous playfulness, as I mentioned, far into adulthood, one of the many respects in which they've evolved to preserve juvenile traits into adulthood and so this carries over into communication.

So let's take the oddly juvenile-sounding calls made by bonobo adults.

Our book is, by the way, on the origin of language, the book we've just finished, Jerome and I, The Revolutionary Origins of Language.

So we would normally expect high-pitched squeakiness to suggest that a diminutive creature, a small mouse, likes to squeak.

If he had a huge monstrous mouse, whoo, it would make it round.

It just reflects the size of the body.

But what happens with bonobos? It's really odd.

The big bonobos, they squeak.

It's as if the bonobo males are trying to signal to the females around them, Look, I'm really actually, I'm really quite small, I'm quite gentle, I'm you know, so female sexual choice, this ability to say no, and for female preferring relative gentleness in males has made them, it's almost unique that you have a species where the large animals make squeaky sounds, which are which and of the first promatologist, Japanese promatologist, to hear When I was vocalizing in the wild, it sounded like birds, like hornbills twittering in the distance.

Okay, right.

Five minutes.

How about 5 minutes? Okay, I can do it in 5 minutes.

Okay.

Right.

Warfare.

Common sympathies practice, yeah, I mean, it's a bit as a percentage to call it warfare, but it looks like warfare.

The males patrol the boundaries.

They're looking to, they're trying to...

raid into a neighbour's boundary looking for a single individual, male or female, often male of course, whom they can kill and they're looking for an isolated enemy male or female sometimes to kill and Jane Goodall was initially horrified.

I must read this out to you.

For several years, she says, I struggle to come to terms with this new knowledge.

Often when I woke in the night, horrific pictures sprang unbidden to my mind.

Satan cupping his hand below Sniff's chin to drink the blood that welled from a great wound on his face.

Old Rodolph, usually so benign, standing upright to hurl a four-pound rock at Goldie's prostrate body.

Jomeo tearing a strip of skin from Day's thigh.

Fegan charging and hitting again and again the stricken, quivering body of Goliath, one of his childhood heroes and when the number of males on either side is large, you get a horrifyingly large proportion of kills involved in these skirmishes or, you know, which have been compared with warfare among humans.

Orders of magnitude, mortality rates higher than for any human hunter-gatherer or agricultural group and I'm going to end with this, what happens with bonobos? When 2 adjacent bonobo groups encounter one another, the males on either side, they find themselves kind of unable to prevent their, on each side, females from moving over to the other side, forming a coalition of the enemy females, ganging together with them in order to beat up their own males to prevent them from having sex with the enemy males.

So I'll just read this out.

Far from supporting their own side in mutual hostilities, the females in one camp They team up with those in the other cells to mount a combined attack on one of their own males.

In fact, the majority of cross-border coalitions were created by females to attack males.

Final line.

So, instead of hostile groups of males fighting one another for possession of females, the common Chimbazee pattern, here we have the exact inverse.

We have females cementing cross-border alliances in order to enjoy sex with one another's males.

Now over to Dr.

Power.

Camilla's going to do the science, the proper science.

Camilla: I'm going to embarrass myself in front of some primatologists here who've really written about dominance, but I'm going to invite their contributions by the end of this session.

Yeah, we're going to ask the question, must female mammals, primates especially, always be dominated if they're smaller and less strong? And the answer to that question seems to be no.

I'm going to follow in the tracks of a leading primatologist, Carol Van Schaick, who has a wonderful lecture up online, which we haven't really got any English publication of Truth About Eve.

I think there's a German publication of this, but there is a beautiful lecture on YouTube if you want to search for Carol Van Schaick's Truth About Eve.

We studied it in our Radical Anthropology Book Club earlier this summer and Caravan Chuck locates, I've been actually borrowing the odd few of his slides, I have to acknowledge this, locates the idea of necessary female subordination in a biblical

or patriarchal ideology written up in the Bible, literate sources in Genesis from 6th century or so BCE.

where as punishment for doing the eating of the fruit and the tempting of Adam, the woman and Adam of course are thrown out of the Garden of Eden for shame in nakedness and their punishment of women is the pains of labour and that the man shall rule over you.

Van Chang notes that farming actually, if that could represent a reality of the demographic shift from hunting and gathering type of demography and population reproduction compared to farmers where farming populations will have more babies, more frequent pregnancy, more disease, maybe worse diet, less good health, all of those things there could be a reality too that the pains of reproductive labour for women in that shift.

Now, we're in a couple of weeks going to hear from Hugh Brodie, the great author of The Other Side of Eden, a fantastic anthropologist who's worked with indigenous hunter-gatherers and their land claims from the Arctic to the Kalahari and he also analysed, he looked at genesis as an ideological tract of early farmers which is impressing the structure of patriarchy and does not describe the gender relations which are much more commonly found among hunter-gatherers and so Hugh Brodie, a social anthropologist, would fully agree with Carol Van Schaik, who's representing a very standard position of hunter-gatherers as fundamentally egalitarian, gender egalitarian, Now, in evolving such egalitarianism, that is a big puzzle of human evolution.

How and why? Van Schaap traces the bias of ideology from that sort of Genesis root through Aristotle to Darwin through the last century.

How could all these supposed great minds, these great philosophers and great scientists get things so absolutely wrong? They were trapped in the patriarchy, reflecting the patriarchy around them.

So he suggests either, A, it's really true, there are females actually, like the Bible says, are inferior and need to be ruled over, or B, could say, no, it's not a matter of ideology of God, it's a matter of just the sheer strengths of males.

We're going to look at this power relations between the sexes in a moment.

Just the matter of sheer bigger and stronger males, So that's just natural.

It's just natural.

Male's going to be dominant.

But actually the 3rd way here, and I think Nicol Schmidt among people here tonight would agree, would represent this better than I can, for all the biological differences between the sexes, between males and females, in fact, or male power in human cultures will be a product of to a large degree of culture and ideology.

But as Chris has been demonstrating with the bonobos, among primates, the social and ecological contexts are going to create a lot of variability.

It could even be cultural variability in whether females or males can be dominant and that is a very dynamic situation.

We, primates above all, are famous for their intelligence.

Machiavellian intelligence is always the term I like to use rather more than social brain because of its kind of connotations of the scheming, scheming brain of all those primates.

The fundamental principle of Machiavellian intelligence, which we're going to hear a lot more about with Volker summer next week, is that brain The ability to negotiate social relations and alliances overcomes just born.

It's not just about being bigger and stronger, it's about being able to create social network and alliances and then if you think that way, females, if they're smaller bodied, females, if they tend to be sort of subordinate, will be the ones who need to have more Machiavellian intelligence than anybody and it's been, in the past, it's been highlighted the social brain is female, Patrick Lindenforce, for instance.

So I've come to this particular details here.

We can see a chart with male statue and female statue going across primate order with basically males tending to be significant sort of taller and in terms of humans in relation to the sex size dimorphism by weight between chimps and bonobos who are pretty similar with each other in range, humans also, there's a certain level of variability there, but if you bring a control for sex difference in body fat compared to muscle mass and look at that, then obviously muscle mass enables much more sort of leverage of actual power.

Humans are in very similar age to chimps and bonobos.

Van Schaik argues he's got two main points.

Males definitely are bigger.

They can be very nasty, but females can have leverage and this is a term that's been used a lot in recent primate literature on dominance.

Their leverage enables them to keep males in line and that leverage is fundamentally over controlling access to their potential, their fertility, their potential for reproduction, and to give, to choose males in accordance with what they want males to do and Van Schaik also talks about the levels of gender equality among hunter-gatherers, but in my view, he doesn't give an adequate account of how that could have emerged.

Okay, so with these power relations of sheer size between males and females, yes, he says males can be very nasty.

We can think of chimpanzees, orangs, gorillas, all those great apes with serious risk of injury to females if there is a real conflict.

Sexual coercion as a major aspect and that can involve, particularly chimps and gorillas, can involve sexual coercion by close relatives and the biggest cost of all for female mammals, but certainly for female larger brain primates, infanticide, the risk of infanticide.

So even with these species that are under a great deal of needing to resist a lot of male dominance and high status, females have a weapon and it is to use sex particularly to evade such costs.

Now that goes back to Sarah Herdy's original work on female primate sexuality.

A wonderful book of women, the woman that never evolved and for a female to, I mean, female primate may have as many as five, 6, 7 offspring in her life.

She has many, many more multiples of matings.

So the puzzle for Sarah Herdy was why are females using so much sexuality.

Why are they having to have sex so many times? Why are they mating so many males? You know, it's not some story of Darwinian story of coy females or anything like it.

Females will be very interested in understanding the dynamics of potential male takeover.

So maybe 1 alpha male and there may be potential alpha, that alpha male status is not static, it's not fixed, it's potentially going to change and in that case, if there is a male outside the group who might come in and take over, this could be a huge cost to a female.

If she has never mated with that male, he then could target, if she has a young infant, that infant is incredibly difficult for her to protect, being so dependent and so vulnerable, and that male could readily kill her infant.

So females will be very attuned to the possibility of another dominant male.

They will use sex because if they can make matings with males that are upcoming and potentially going to be dominant alpha males, then they're using those matings as a weapon to confuse paternity.

Examples would be, and we've got a gorilla expert here, gorillas with much smaller females If they are worried about a new male coming in and taking over, able to sneak off into the forest, into the bush, and try to make mates, mating with such a male, some male that catches her eye, she wants to have those secret matings, to be able to persuade that male if he could come in, that she could be having his baking instead.

Even if she gets clobbered by the current dominant male, it's worth the risk.

So we can see that kind of thing happening with gorillas and among other things that gorillas do is to hide any information about moment of fertility.

So this is adding to the confusion.

We also have famous stories of the langur monkeys, the Hanuman langurs, and I'm going to come back to the langurs in a while.

Langur monkeys are famous or infamous for infanticide, which of course was one of the very first research projects of Sarah Herdy as a leading early primatologist, sociobiologist and langur monkeys also conceal any signal of ovulation.

They have a lot of sexual proceptivity, wanting to have sex with any males that are going to come into the troop, not just the horror male and there is a big danger if they do not have sex with those outside males, that any male coming in would kill infants.

That's the classic infanticide story.

But if we go on to the possibilities of what could leverage power differences between the sexes.

There are case studies like vervet monkeys, the little monkeys there at the top, or the bonobos that we've heard about from Chris, where the females really in monkeys

and apes like those are taking things to another level in terms of really, you know, the message to the males is You're going to threaten my infant? Don't even look at my baby.

It's just something else with this.

Now, the vervet monkeys, well, we're looking at the possibilities of alliance, of fighting back against sheer fighting ability.

The sexual dimorphism, again, similar with vervets, the same sort of ratios of males being about a third bigger in weight as with the bonobos.

sex of dimorphism, giving that power to the males.

But then what about if you've got alliance support in conflicts, you've got female coalitions that might be possible? And if you have this desirable commodity, the commodity that Foley and Gamble absolutely forgot about, potential for fertile sex, and if you can hide and confuse when exactly you're liable to be fertile, then There's not much use for male vervets coming into troops.

Vervet females will be on their home turf with vervet female relatives around and if males come in there and those females really don't like the look of that male, they say, well, no, chase him off.

But if he tried to fight for a female when he doesn't actually know, is she fertile today? Is she fertile tomorrow or the next day? There's not any point in him doing that fighting.

He's being too, you know, what's the point of him being violent? It would be a much better idea if he behaved nicely and got the females to agree to let him in, basically.

So let's see what are our possibilities here for these females.

Coalitionary leverage, potential coalitionary leverage over reproduction.

One, if you can gang together, it's the bonobos evident you can and verb it somewhat.

Control fertility or conceal fertility.

Don't let the males have information.

Control access.

Be able to choose.

No, I don't want you.

Okay, you.

Choose the males who behave nicely.

Okay.

So now what I want to do, well, we'll have a little bit more look at the bonobos that Chris was talking about, because we know vervets are concealing ovulation, but bonobos, they're pannins, they're like chimps with certain amount of sexual swelling.

But unlike chimps with a very demarcated oestrus signal, bonobos, here's another beautiful slide I've stolen from Carol Van Trike here, bonobos actually are confusing and concealing.

accurate information about ovulation.

I mean, there's so much mating going on in a bonobo group anyway that I don't think the males are trying to pick and choose that much.

But you see the marked demarcation of ovulation on kind of day zero of that whole cycle length and the thicker grey bars are the maximal swelling phases noted for bonobos.

which can be scattered either before the ovulation or can come after the ovulation, it's highly unpredictable.

It's not a good guidance for males as to when a bonobo is actually fertile and we've got a very recent paper that's really giving the data on a number of wild bonobo groups from Martin Surbeck and colleagues.

with a relationship looking at 2 measures of male versus female bonobo power.

So the one over on the left there is ***** conflict where males submit.

If it goes right up to the top, about 80%, then that happens when there is a very considerable frequency of female coalition formation and it's a quite positive, it's a very positive, steep relationship between those two things.

The more male submission, the more female coalitions, basically.

On the other one, the more males that are outranked by females on the right-hand side, the more female coalitions.

Quite clearly a relationship there from that studied by Silbeck.

Okay, so how much can we take what's guiding this sufficient, this ability of females to resist male dominance and even out-dominate among monkeys and apes? How much can we take to humans? Well, what about the concealment of ovulation and confusion? Again, stealing some slides from Carol Van Schaikt.

This is Bob Martin's data about timing of ovulation in humans.

Ovulation not very predictable.

That peak is coming some 10 days or so after menstruation ended.

But there is a significant variability of when is the best time to get pregnant when you're actually ovulating.

So there is significant variability that is actually recording timing of ovulation.

This is about looking at desire, levels of desire in relation to also the hormone and progesterone changes there.

But what's the main thing about it is that we have a kind of, you know, it's like going almost through the cycle with not that great a variability, though there's a bit of a dip coming before the menstruation there.

So that's recording, it's probably from Western lifestyle probably from my students, a lot of that, but it's recording from diaries.

It's got hormonal assays of the hormone cycles and diaries of actual wish for sexual behaviour, wish for having sex, whatever.

Again, and this is recording supposed actual matings actually having sex against an ovarian cycle that's been counted as 28 days, which isn't the best average for menstrual cycles.

But again, we're seeing a fairly level line for most of that, where, a guesstimate about where ovulation is, but basically before ovulation, during ovulation, after ovulation, pretty similar amount of having sex.

We are among primates the most continuously sexually receptive, can say yes, can say no, any time.

Carol Van Schuyk was pointing at the bit with menstruation and saying, Oh, and apart from the bit with menstruation, menstruation is kind of evil.

Hang on, Carol.

This is not a biological description of menstruation.

It's an ideological one.

Let's think about that one.

We're going to come back to that.

But what we're seeing is definite evidence of human females concealing ovulation from males, possibly from themselves, but males are not good at, men are not good at telling when a girlfriend or partner is actually ovulating, apparently.

Okay, now I'm going to move to something else that definitely can change alpha male outcomes.

This is reproductive synchrony.

I think many of you in the room will have heard of menstrual synchrony, which is debunked by science, even though it's supposed to be in women's minds.

Women never can forget about it, they believe in it and we're not just talking about menstrual synchrony, we're talking about any type of reproduction, any type of sexual activity at the same time.

So it could be seasonality, creating reproductive synchrony, or it could be ovulatory synchrony, actually synchronizing ester signals or fertile periods.

What we're just going to look at there is the cartoon of a model of what happens with reproductive synchrony and then look at some real primate data, how that changes.

alpha male outcomes.

In fact, it is the product, it is the greatest driver to a kind of reproductive egalitarianism, potentially.

So on the left-hand side, we're looking at the circles as females.

They're like clocks, and when they're fertile, they're sort of pointing at the right time and over on the left-hand side, they're desynchronized, they're not in sync and therefore, If there's an alpha male amongst that group of males who can elbow the others aside, he can line up, mate with the female who's on time because he knows, so he can tell, and wait for the next female, pick her off, and wait for the next one, pick her off.

He can keep the other guys out.

Totally.

So basically those females will have access to like one male.

Suppose they want more males coming in to the troop.

whatever reason that might be, maybe they don't want, but if they do, if males can be useful, if everyone should have one, line it up, do ovulatory synchrony, or do lots of sex, apparently fertile, sexual proceptivity at the same time, and you will, yeah, one male each, all the males coming in.

It's very simple, very simple model.

Okay, so let's look at some actual real private data here and this really showed something.

This is a paper back to 2006 on wild chimpanzees and an effect of reproductive synchrony on what's called reproductive skew, the difference between reproduction from the top ranks to the bottom ranks and what we're looking at on those bar charts is, yeah, this is #1, top ranked male.

If with the grey hatch, light grey hatching, the females aren't really in sync, there's one or two that might line up.

but they're mostly not and that male is going to get 90% almost of paternity and then male #2 gets absolutely nothing because he's the enemy or rival.

Male #3 gets a little smidgen because he's the ally of the top guy.

Suppose you get in the dark grey columns, you get a few male, females actually start synchronizing.

Look at how the reproduction spreads.

across the group down the ranks.

Yeah, this is real.

That is reproductive egalitarianism undermining.

It's a real undermining of alpha male privileges there.

Now, there's another case study with some notable effects from synchrony done by a friend, a colleague, Vorka Summer, as well as other scholars, Heisman as well.

looking at particularly those langas who have such problems of infanticide, the Hanuman temple, Hanuman langas, monkeys of the Indian temples.

Two populations, one in Ramnagar, Nepal, which is extremely seasonal, where female reproductive cycles get lined up to be fertile with the rains, when the rains come and the food comes and these females are going to start cycling and likely them to get pregnant.

Multi males come, many males come into those groups because many females start to be fertile at the same time.

That's the principle of synchrony.

The females have long periods when they are having sex.

It's not tied into just when they're fertile.

They have extended receptivity.

They give the males no information at all about ovulation or menstruation.

Nothing.

Total concealment.

They are confusing paternity and they are spreading paternity down amongst the non-alpha males.

They get a benefit of very little infanticide as a result of that, but the trouble is the males are coming into the troop and eating all their food.

They don't actually want the males to eat all their food and they have a low birth rate.

They can't do much about the seasonality, they only get a benefit of them.

So it's costs and benefits.

This population a Joppa is fed, provisioned in the temples with offerings because they're sacred monkeys and they have very, they are seasonal, but because they get food all year round, the females continue having pregnancies, getting pregnant through the whole year and in that case, they are actually desynchronized.

They actually deliberately desynchronize apparently and the single male can monopolise.

In fact, they prefer a single male to monopolise because the other males won't eat their food.

They're deliberately desynchronising and this is so interesting.

They only have a small bit of time to give him, to concentrate paternity on him, and they even show menstruation.

A group of langurs, the same species, one lot aren't even showing menstruation, the other lot actually do.

So does that cue the male to know about menstruation doesn't mean they're going to be fertile then, but what's it telling him? Now you've got to start thinking about human sexual signals as well.

What could menstruation be telling that male? This female's not pregnant.

Okay, get your eye on her.

Do that, you know, this is the time to focus.

The trouble with this strategy is that there will be big risk of infanticide when there is a male takeover, but because there aren't males eating their food, these females are better provisioned and they have a higher birth rate.

So actually they prefer to desynchronise.

They don't want the males in the group.

Was that the same with our ancestors? Let's just think about it.

Langa females are not getting provisioned by males at all.

Did you have a question?

Audiance member #1: I have a question.

Something that I don't understand is what is the interest of males to have paternity, and in general, what is the relationship of males to their children? And I suppose that infanticide happens because they kill other upcoming infant males so that they don't take the alpha position at a certain point after.

Camilla: They– They're killing.

infants that they know are not their infants.

Audiance member #1: But what about their own infants?

Camilla: They won't want to kill their, not even if they have any thought, if they have any idea, if they've mated that female, they will not kill her infant, if that could be their infant, they will not.

Audiance member #1: So there's a sense of protection.

Camilla: Absolutely.

Audiance member #1: And this power, is power inherited? Or like the alpha position, could it be inherited?

Camilla: Well, it depends which species you're talking about, but...

Maybe some of the primatologists here, but can I go on because we're nearly, I need to go to humans.

Five minutes.

Does anything we have to say apply to humans? Gang together, conceal ovulation or any sign of fertility and control access, choose males that behave nicely.

Does anything have any effect on our evolution? we have a design of concealed ovulation, continuous sexual perceptivity, receptivity, scrambling information to males about the precise moment of fertility, very like langurs, well designed for paternity confusion.

That's definitely that.

I would argue that is going to be a very old feature in the lineage of **** and it could go quite time deep to great apes because we, our ancestors, didn't go down the road of the panins of chimps and bonobos to have big sexual swellings and then sex with absolutely everybody as a way to defend against infanticide.

This is likely to be a counter-infanticide really in multi-male, multi-female roots going back quite a long time.

But we talked about Langor menstruation.

We talked about Carol Van Shaik's not really working out menstruation.

Menstruation is a salient cue to any observant male that a female, it's not she's fertile right then, but she's not pregnant right then, which means she can be fertile very shortly after.

So this is going to be of real, real interest in a Darwinian world to any male.

Okay, so I'm now going to show very quickly, I'm sorry, we've got another five.

I have to keep going.

I had to answer the question.

Yeah, we introduced Female Cosmetic Coalition 30 years ago, this 2025, 1995, we put out this model with our colleague, Chris Knight, and our colleague Ian Watts, who is a major archaeologist in Middle Stone Age pigments and simply, menstruation is going to be acting as an absolutely pivotal cue or signal in hominin groups, our ancestral groups, marking out any female who's imminently fertile amongst a group of females where there's breastfeeding, pregnancy, menopause, there won't be menstruating, she will and are males going to be interested in that? Yes, they will and on both amongst the females, amongst the males, there is potential of conflict.

So those females will need to be doing something about that.

The young female who's, it could be their friend, could be their relative, could be, they don't want her subject to an alpha male deciding to grab her and take her off.

So the first thing they need to do is surround and protect, that is control access to her, to her fertility.

One thing they could try to do is hide it, but we have argued that even though that might have happened sometimes in some places, in some species, in our ancestry, they did something else and they did this cosmetic coalition strategy of joining her signal of menstruation and claiming that, well, actually, we're all menstruating and I'm showing the lovely modelling of the Himba of Namibia, who are wear their rich garb of red ochre pigments, performing marital ritual here, a pre-marital ritual here actually and here we've got some more again.

If we think about how much these Himba women are actually controlling access to a girl just before her marriage, how much they are able to choose and make a decision about which males are behaving nicely, how much they're ganging together here, If we think about what's happening with these males who are kind of confronted by that line and that group of female cosmetic coalitions, well, some of the males may try it in an alpha strategy and say, oh, I can tell that one, she's menstrual, but she's not, I want to have her.

But these male, these females, if they're really together in their display, are just saying, to that alpha male, no, out and all the other guys who are non-alpha, who are willing to behave nicely, behave nicely means they're willing to work, unlike those Langers who do absolutely nothing, these males are potentially behaving nicely enough to actually be useful and get stuff and bring it back.

They will be, they will be very, there is a mutual sexual selection process going.

where males who are willing to invest will be choosing those females who are getting rid of alpha males, because it's in the reproductive interest of those males to do it.

Now, I'm just going to say quickly, very quickly, what do we think drives the process? Is the requirements of mothers, our hominin foremothers, our human foremothers, because of the extraordinary energetic requirements they had as brain volume doubled.

This is chimpanzee, roughly female chimpanzee brain volume, as it doubled to rectus, as it tripled.

as it climbed up.

So this chart, this is actually the material story of human evolution.

How did mothers achieve these extraordinary large brain sizes in their offspring? Because mothers have to produce the energy.

They have to produce the energy with breastfeeding.

It's down to them.

Now, Carol Van Schyke has been enormously influential here because Here is what he and Karen Isler called the grey ceiling and this is Ostro, I'm sorry, that's been rather old slide with Ostropicines kind of smeared out.

All these hominins, early hominins, Ostropicines, bipedal, you know, hominins coming into early **** all of these hominins are roughly the same size as great brain

volumes and Van Schaik says this is grey ceiling and what that means is that is as large an adult brain size as a mother all by herself.

No help from anyone can raise an offspring too.

That's it.

So all of these are basically single mums.

That's the ceiling and whoosh, 2 million years ago, wham, smash through.

Something really happened.

Now Sarah Herdy's book, Mothers and Others, is fundamental here.

Mothers and others implies mum gets help from others.

Then you can start thinking about, well, which others exactly? Is it going to be hubbies? Is it going to be males being so nice straight away? It'll be her mum.

grandmother hypothesis.

It'll be her older daughter, the kids helping, Karen Kramer's ideas and then maybe the males starting to get useful.

Her erectus stays roughly the same level.

Two times, Tim, wham, up again, over three times.

This is, we've been hearing a lot about the Chinese skull recently and the muddle in the middle.

This is a bit later than that.

With large brain sizes, large brain sizes come about with Neanderthals, with Denisovans, and our African ancestors, it's in the last three-quarter of a million years that is when we expect the female cosmetic coalitions to come into real operation and I'm just going to show you very quickly, The main predictions we made for female cosmetic coalitions, very earliest evidence of symbolic behaviour in humans, was cosmetics industry focused on blood red pigment and the emergence correlates with brain sizes.

It correlates not because it makes females cleverer because it means they need more energy and they've got to do something about that.

That's why.

So it's kind of this time window, 600 to about 150, when those brain sizes are pushing the strategy.

Let me just very quickly show you the picture.

I can't say very much here.

Against the emergence of the first basal Homo sapiens, derived Homo sapiens in Ethiopia.

This is Morocco, this is Ethiopia.

Ochre actually goes back older with our colleague Ian Watts working at Vandenberg, over the 300,000 East Africa, central, south, southern African coast, and very shortly afterwards, bismuna shell jewellery stained with ochre, just like the Himba women were wearing shells on their ochred skins.

Again, Morocco, Morocco, cutting edge.

This is the best work on the pigment record, the Middle Stone Age pigment record, talking about the habitual use and emergence of ritual strategies with red ochre, and his colleagues.

The very initial stages in Africa, in our ancestry of red ochre use, come about right in the Northern Cape area where our colleague in what's worked with Vanderberg ochres, possibly as old as a half a million years ago.

This would be the ancestry of Homo sapiens and some spots up above in East Africa too.

That's the very earliest stage.

Then emerging about the time of our speciation, 330 or so, we start seeing the ochre strategy spreading all the way in the Rip Valley And then, wow, 160,000 years ago, a sort of explosion of habitual use, top to toe of Africa.

You may say, well, what's happening in the centre? There's not much mineral pigment there, but there would be lots and lots of pterocarpus red sap plant pigment there and Ian has done some lovely work on the use by Central African hunter-gatherers of those rich red pigments.

When we published Female Cosmetic Coalitions 30 years ago, I'm forgetting, we made a prediction then that 160,000 years was the kind of take-off point.

The human revolution.

The human revolution is the way to call it.

That is not a fashionable term these days, but we feel vindicated by the Dapshalska's paper on that.

Okay, we've just about made time.

I'm sorry, it's a little bit long.

So we've said enough and we want to call in some other experts on this.

I'll stop the share all right and yes, questions in the room.

Audience questions

Audiance member #2: Thanks for the presentation.

This question is just more the case of the bonobos that you were talking about.

In the cross-sex antagonisms, there seem to be an asymmetry in the alliances.

So the female alliances were being formed and from one like out of it was the lack of alliances with the males.

what are the explanations for that sort of absence, or if there are cases, why they're not affected in the same way that female alliances are?

Camilla: This is for bonobos.

Chris: Yes, I mean, the point about the chimp, the chimp males form alliances, because it's useful.

They can dominate the females because the females are so scattered and isolated and easy to dominate, so it makes sense to invest in an alliance.

with the bonobos, because the females have got a very rich environment and can forage together without being in competition and therefore form strong alliances, it's the cost-benefit ratios are very different.

Why would a male think of forming alliances if actually, on balance, it's not going to really work? I mean, it's quite difficult to imagine a system where it's actually stable, where the females form alliances and the males form equal alliances, one of the others probably going to end up dominating and if the females are ending up more powerfully allied, then, increasingly the males are going to find it not worth the energy of forming these alliances and instead do this other thing of being nice to the females instead of being violent to the females, which is what the chimpout is.

So it's about relative.

Camilla: And if global males do a lot through their mothers and that's also quite important, the females are doing this.

Chris: I just wanted to say, because we didn't have much time, I really, I'm not in any way with the bonobo staff suggesting that our ancestors were anything remotely like the bonobos.

One of the critical things we've argued in our group is that unlike all the other great apes, where it's mostly on coming mature, it's a female who has to move out to avoid incest.

In our case, there came a point where young females found it possible to stick with mum, stick with mum, stick with mum, and force the males who might be having unwanted sex with them for them to move out.

So a switch from sort of patrilocality to macrilocality, or a switch from male filopatri to female filopatri, as it's called by primatologists, happened quite early, around the time when Sarah heard his mothers and mothers came into operation.

So I'm just saying with bonobos, the females who are forming alliances aren't related.

With us, the females who are forming alliances would have been sticking with mum.

Your mum is your main ally, but if you're with your mum, you're going to be with your sisters.

So it's a radically different scenario in our case.

Audiance member #3: Yeah, just about the exogamy in bonobos, the males that are associated with each group, have they come from other troops?

Chris: No.

They're male Philopatric with males stick with mum over over time.

Audiance member #3: OK, and the females move?

Chris: So, can one way of saying it with bonobos, the females have to manufacture sisterhood.

Right, OK.

By DD rubbing.

Yes, as everyone knows, I'm sure everyone knows, the females with lovely swellings, they look like that.

When a female sees some food, And there's another few money by, and they might fight over it, or why not just lie down, rub genitals, have a have a nice time, and then now you're bonded, so they made artificial sisterhoods through...

to lesbian sex, whereas with our ancestors, you wouldn't need to do that because you genuinely were genetically related.

Audiance member #3: Well, I guess what's the bonobo sex ratio?

Chris: Oh, pretty much each book.

Camilla: It's not much different.

Audiance member #3: And common chimps different.

Chris: Only because, yes, I mean, I'm not quite sure the answer to that, but I mean, obviously, a lot of males kill each other, but I'm not sure they kill the violent males kill more males in a kind of warfare than they kill females, because the females end up having a bad time as well.

I'm not, to be honest, I'm not quite sure the answer.

I think it's I think it's a one-to-one ratio, really, in both cases.

Camilla: Any queries online?

Chris: This is not the kind of this is not the kind of story you're going to find very much in the media, so there should be lots of questions about it.

You should be quite sceptical about the whole thing, because it's saying things which...

aren't usually said.

What's usually said is that male dominance is natural because we're primates.

Camilla: I mean, one of the reasons for following Van Schaik is one, he's got a, he's such a very important, influential primatologist.

He's always had great influence on us because he's always been thinking about ensabilisation energetics.

He's always been thinking about concealment of ovulation and female control over fertility and his talk on this truth about evil, just go and find it online, it is a very ambitious argument that you do not often find a leading primatologist like that putting that down.

So that's why I wanted to really sort of make something out of it, but say it, but pick him up on where there's a few items that make a different, have a different complexion in human evolution, particularly menstruation.

Chris: When I mentioned the reversal of the normal causal scenario, the causal cascade as it's called, do you remember I was saying that Foley and Gamble, they said the normal relationship between changing environment and changing foraging strategies and then changing social relationships is that the females move first in response to the environment and then the males map themselves onto it.

Froley and Gamble say, no, it's the other way round because the females don't have any bargaining power.

They've got nothing to bargain with because the males control the meat and I hope we can see how shockingly political that is.

It's just like, can you see that it's just, it's kind of weird.

Why on earth if females move to where the food is, why would they move to an area where there isn't any food except the kind of food that the males are going to provide in hunting.

It requires such a huge jump.

You've got to manufacture this patriarchal females for some but bizarre reason.

Instead of staying where the water is, where the fertile food is near, I mean, there's a lovely book called The Improbable Primate, Cloud Finlingson, how water shaped evolution.

Chimps don't need to drink a lot of fresh water because they're eating fruit all the time.

Humans, we needed to be within reach of fresh water, but wherever the fresh water was, there would have been plenty of...

lush food, all kinds of bulbs, and maybe kinds of fish and all sorts of stuff to eat.

So the idea that females don't have enough food and they're going to rely entirely on males is weird.

But of course, as Camilla's pointed out, even more weird is the idea that females don't have any bargaining power.

Because of course, the most valuable thing or resource of all from a Darwinian standpoint is fertility and if females can exercise coalitionary leverage in relationship with that, right, you're not going to get sex, you're going to bang up, get gang up with each other unless you behave.

Can you see how that is? That's the kind of leverage which is completely ignored and just one more little point.

In my book, 1991, Blood Relations, what I'm sort of best known for, perhaps foolishly, I called it sex strike theory.

The trouble is sex strike makes people think, Oh, well, how can we go on strike? It's now called coalitionary leverage, and it's everywhere within primatology.

If you've got some valuable and you want to exercise leverage, you've got to deny that valuable to the opposition.

Forming A coalition, when it's about sex, that means you have to be able to say no.

OK, I call it sex strike, going on strike.

If you want to be non-political and not upset people, don't call it sex strike, call it common history leverage.

Camilla: In the very interesting recent paper that looks at the whole primate order by Elise Houchard and colleagues, one of whom was partly on here and is gone now, sadly, they come up with an argument that which sex actually has control over fertility and access is the dominant sex.

But that is a highly dynamic situation.

It may not be the same even within one species, but across species there can be a lot of variability.

I've got a question here from Charles Monroe.

Does development of female coalitions and manipulation of ovulation, you mean hiding of ovulation signals or otherwise, in modern primates stem from a common ancestor with humans? No, it's talking, Charles, it's talking about the whole primate order with including lemurs, where there is a lot of female dominance, monkeys and great apes, including gibbons, including...

So these are, this will be highly sophisticated, changeable adaptations that will come out with different outcomes and different mating systems.

But we can see from the whole kind of phylogeny of primates, where does concealed ovulation arise? Where does female coalition power arise? Usually amongst female kin-related groups, which are often old-world monkeys.

But what's very interesting about Elise Houchard's paper is they are arguing that The reason it isn't necessarily females being at home with other female relatives, it's females on home turf.

They are on home turf because they could say no to the threat of closely related males trying to have sex with them.

That's why they stayed home.

Otherwise they would go like the great apes.

Chris: So just again, there's a dominant model, certainly within social anthropology, and I think more widely, it's about the origin of the incest taboo and even today, the origin, the prevailing model is that the male sex in the past invented the incestor rule.

So, this comes from Levi Strauss, you have a group of, you know, group over here, group over there, these males over here realise one in a day, Oh, if we can give our sisters and mothers or sisters and daughters to these other males and they give us their sisters and daughters in exchange.

But in order to do that, we must make sure that we don't keep our sisters and daughters to ourselves.

By giving our sisters and daughters to the other group and then forming an in-law relationship, an alliance relationship between ourselves, that's going to initiate the prohibition of incest, the fundamental, deepest cultural rule right across all humans.

I mean, do you find that convincing that the male of the species invented this taboo?

Camilla: It's quite clear for any primatologist would be pretty clear that it would be females choosing that.

Chris: All these chimpanzees, you know, when a male, when their brother or father, the father doesn't even usually know he is the father, but when an older brother comes along looking for sex, the females feel most uncomfortable.

No, we don't want sex with you.

But with the chimps, that male, that older male brother, may just use violence.

I mean, Perhaps don't call it rape, it's too anthropomorphic, call it sexual coercion, but it looks very like rape and the females can't do much about it.

But I mean, you can just see how if there's going to be a rule against incest, that's going to come from the females, despite the fact that the overwhelming view is that it came from the male.

But as soon as you think about it from a Darwinian point of view, you can see that the costs of the female are immense.

You're only going to have three or four babies, six or seven at the most, And if there are genetic problems with, incest, which there are some, they're not huge, but they're statistically significant, the female bears that cost.

A male can get a sister pregnant and you have some, you know, funny-shaped ears or something, and who cares? You can go and get somebody else pregnant.

The males don't pay any cost because they can go to find another female.

The sex which bears the cost of incest is a female, and you would expect females to have, you know, been the sex responsible for producing this amazing thing, a rule against incest, an actual rule, a moral rule against incest, not just, you know, getting out of the way, which is what the other primates have to do.

Camilla: Alistair again, you're sort of dominating the conversation.

Carry on.

Anyone else? Yeah, but Alistair.

Audiance member #3: The thing about the Foley and Gamble was that...

It presumes that at that time there was a single landscape.

Yeah.

Camilla: Well, no, they have 5 stages and what's really rubbish about them is when it comes to actual humans, Homo sapiens, they run from the beginning of Homo sapiens, like Jabalahuda, something, all the way through to farming, and no differentiation among egalitarian hunter-gatherers, where there is absolutely no male control over, or very little.

male control over female reproduction, to farmers, pastoralists, where, yes, some male resource holding potential may indeed govern matters of disposing of females in marriage and this kind of thing.

So it's a very much more, they just run the whole thing into one.

Ian, did you want to say anything about Foley and Gamble? You were talking about it in the chat there.

I think maybe you will wake up.

Hilary.

Audiance member #5: There's two things that I'm puzzled about.

One is that the male chimps seem to be saying that they actually remember who they've had sex with.

Camilla: That's not difficult, is it, to remember if I've mated that female or not?

Audiance member #5: I don't know, have any studies been done on memory in male chimps?

Camilla: I mean, it would be a good idea, but I would strongly suspect that if Langa males can tell I've had sex with her, but I haven't had sex with her.

Audiance member #5: It doesn't seem to be that it's an assumption, and I've wondered whether it has been tested and the other is that...

The females in humans, it seems to me you're saying that female humans don't want to have sex and also, from kind of observation of things generally, it seems that males often control Female sexuality.

In patriarchy, yes.

Camilla: In patriarchy, yes.

But I don't think we got here that way.

I don't think we managed all that encephalisation with males controlling female sexuality.

Chris: Why do you think they're saying females don't want sex?

Camilla: We had charts which were showing women's willingness to have sex right through the cycle, which is more than any other female.

Chris: The human female wants more sex than any other ape.

Camilla: Even more than the neighbors.

So we're not saying they don't like sex, but we are saying they need energy for babies to use that sex to bargain with men to do some work.

Chris: If you're a mother with a baby and it's sex or your baby, you're going to put your baby first.

Yeah.

Audiance member #5: That didn't seem to me what was coming out from what you were saying.

Camilla: Oh, sorry.

I was obviously speaking.

Obviously losing it.

I'm sorry.

Chris: No, you weren't losing it.

No.

Camilla: We did show that confusion of fertility signals, that capacity of continuous sexual receptivity, and the fact that menstruation is like the real fly in the ointment.

It's the giveaway, the big giveaway.

So they had to do something about that.

Chris: I perhaps say that Jerome, who's going to be speaking quite a lot here, Jerome Lewis, talking about the Bayaka and it applies to so many other hunter-gatherers.

They are strongly gender egalitarian hunter-gatherers.

But the women like to say that they are capable.

They say, well, we, you know, the men just have to have sex all the time.

They can't control themselves.

We women, we can say yes and we can say no.

So there's a kind of female ideology, at least among this group.

that we women can say no and these poor men, they're so, they think they've so much got to have sex that we can use that to our advantage.

I'm just describing that.

So something that I...

Camilla: Well, I mean, if you think of all the great art coming out of the Ice Age in Upper Paleolithic, with some people arguing some of that is like pornographic art made by males, Even if that were true, I think a lot of it is sacred ritual artefacts, probably a lot of it made by females.

But even if it were true that it was males creating things expressing their wish for female sex, that would be saying something about how much they kind of want it and how much females are able to control it and it would be some sort of aspect of that, wouldn't it? They wouldn't be just making stuff referencing sex if they could actually just have sex.

Chris: Yeah, I mean, the biggest evolutionary psychologist these days, the one most famous, I suppose, is Steve Pinker, who just said all that rock art imagery from the Upper Paleolithic of all these figurines, evidently sacred female figures, he just thinks it's all male **** that he knows nothing about hunter-gatherers and I don't know.

Somebody at the back, sorry.

Audiance member #2: On the point about them covering themselves in red paint, kind of confused menstruation signal that they might all be capable.

It seems plausible that it could happen as a ritual, but would it need to be much more frequent than a kind of infrequent ritual that signal? And is it plausible that–?

Camilla: Yeah, so in the bit we would model it– I've got Ian here online as well– we would model it as maybe a couple of– we see the stages that the pigment emerges, we would model it as a couple of stages before the pigment becomes a habitual presence.

Because when you look at that situation of you get one menstruating female amongst the group, that could happen loads and loads of time and it ends up as some kind of hustle until you hit that steep curve on the encephalization and then it matters.

It really matters.

That's why we're saying it would start at a certain point, like 600,000 years ago or whatever, to actually, they've got to do something about it.

They've got to be doing it whenever a female is menstruating amongst them.

Wait, please, sorry.

I just said it again.

We've got to remember that in a hunting-gathering demographic type population, there is a lot less menstruation than amongst the Western lifestyle menstruation.

Laid four to five times less, fifth quarter, because we just don't have that many babies, we don't do that much breastfeeding.

Menstruation, why is menstruation so significant for hunter-gatherers? Because it is relatively rare, it's incredibly valuable, it indicates power, fertility, all of these things.

which our Christian, you've listened to Hugh Brody in a couple of weeks about how our Christianized mindset has just finds it very hard to understand what the ways that hunter-gatherers work and for hunter-gatherers, their menstruation is not a matter of stigma, pollution, all of that stuff.

It isn't.

It's value.

It's power.

Do you want to say?

Audiance member #2: Yeah, as a follow-up.

How do you those who avoid arms race of men should get better at identifying what the actual symptoms are and then.

Camilla: Women having to get any...

How do you identify an arms race of...

So the men who, the ones who will be trying to, oh, that's the ******* menstruating, are the alphas.

Are they going to be any good to those mothers with their encephalizing? No.

So those females are going to just say, not you, you're helpful.

They're just going to cut, they're just going to shut that down.

Chris: And that's what eventually happens when real menstruation is supplanted by symbolic menstruation in the form of ochre, is that in the model, and you know we're pretty certain this is so frequent in ideology and mythology and Ian's done some work in terms of archaeology as well, those menstrual ricules would have been once every month.

Camilla: You can do it once every month.

Once you can fake it, you can do it when you like and not just that, but men can start doing it too.

Chris: Yeah, well, and then it goes to another hilarion.

The once a month thing would have been round about dark moon, there's a belief that women might be menstruating.

They're keep away, they're powerful, all that stuff.

Around full moon, okay, the spell's broken, it's lifted, we all can lift those taboos and now enjoy sex and feasting.

So it's a full moon, dark moon, monthly rhythm, which in many ways still survives, at least on a ritual level, among today's extent egalitarian immediate return.

Camilla: The hunter-gatherers almost worked that model almost to this day.

Chris: The most powerful ritual is a dark moon, an SMA ritual.

Camilla: And there are material reasons why.

The hunting is much better to happen during the time of the moon being bright in the sky, and that is the time when they need to be.

Chris: Whereas the dark moon, the lions are out, dark moon, the lions are leaking.

You don't want to be looking at sex around dark moon, you get eaten before you find your lover, you know, so it's a reason why it would be lunar rather than solar.

Camilla: Yeah, definitely.

Christine, a more practical question, which is?

Audiance member #5: Those women all covered in red ochre.

How do they get it off? How do they get it off?

Chris: Oh, don't worry about it.

Audiance member #5: The next month, red ochre hangs around for so long.

Camilla: How do they actually...

I think the Himba are not the model necessarily for hunter-gatherer who would not necessarily be using that huge quantity.

I mean, I don't think they're necessarily all over body paint.

You could still use...

Audiance member #5: Are there any rituals to do with taking it off?

Chris: Oh, it's interesting.

Camilla: That's a nice question.

Not that I'm, I mean, there would, some of the Nuba body paint is very significantly embedded in kinship clan systems, the Southern Sudan population, the Nuba, with the need for fiance male to provide the relevant colours of ochre in relation to clan and kinship, and that should be refreshed on a daily basis.

Nimba women have refreshment on a day.

It's like their clothes every day.

Whereas with hunter-gatherer, Khoisan hunter-gatherers, I mean, you can jump in more, and also Central African populations, this may be an occasional production of a certain amount of pigment or cosmetics, but it's not all over the body.

Chris: In my book, Blood Relations, I do, I've had a number of examples of where, to answer your question, Christine, there's a kind of in the sense that around full moon, the meat should be coming in, the women need to cook it.

There's absolutely no way women would be cooking meat.

Cooking means getting rid of the blood, but using fire.

No way women would be cooking meat if there's any suspicion they might be menstruating.

So there is a need to get rid of all the menstruation, all the ochre around full moon if that's the time for cooking and sex, which it kind of is in so many symbolic systems.

But is Ian going to say something? I don't know.

Audiance member #1: Does Ian want to speak?

Chris: Perhaps she doesn't know what to...

Audiance member #6: Only that I realise that sometimes it's useful to have a straw man.

Camilla: Hang on, we're talking about what?

Audiance member #6: Foley and Gamble.

Camilla: You're coming back to Foley and Gamble.

Okay.

Chris: It's a straw man.

Audiance member #6: Okay.

I mean, but maybe it's worth pointing out that they are just that, just a straw man.

No one cites them.

I think, as you pointed out in the chat yourself, I mean.

Camilla: Sarah Hurdy blew them out of the water.

Which is just fantastic.

Audiance member #6: You don't actually have any opposition.

That's part of the problem.

They just try and win by ignoring you.

Chris: Yeah.

Ian's just said they're a straw man, which I agree, but they're very influential, powerful, high-stated straw man.

Camilla: Yeah, they're very established.

Audiance member #6: They're not.

Chris: Well, they're not now all right.

Audiance member #6: Pinker are influential, powerful.

Foley and Gamble I'm sorry, they don't meet that bar.

Camilla: Well, they're a bit old hat, they're sort of going over the hill, a bit like ours, but...

Chris: What they'd say is that the problem is that we are, nobody denies our model, nobody wants to tangle with us, but what they try to do, if they possibly can, is completely ignore us. That is true. Yes, that's true.

Camilla: Yeah and it's just worth saying that today's effort was to bring out from the work by primatologists at the moment on stuff that basically has continuity to the strategies that we've talked about for a long time.

Audiance member #6: I mean, it was all new stuff, I thought.

Camilla: A lot of it is really very recent. Yeah. Definitely.

Chris: Did you have a question? No, sorry.

Camilla: Anymore, that was this lady here.

Audiance member #1: Yeah, okay, so in relation to your point earlier that it was coming across as if women don't want sex, I just remembered a point you had made in an earlier seminar, but not today, that...

The cosmetic coalitions, they're not some kind of necessarily like platonic experience and they give the opportunity for lesbian sex.

Camilla: Exactly.

They give a lot of fun and games anyway, definitely.

So emotional.

The talk I would really, really recommend for people is like late in the time with Morna Finnegan, who's the author of a beautiful article, The Politics of Eros and her experience with Bayaka women of the way, they're lying along, across, lying on top of each other in their, there's just their bodily connection and this, whether that, is it eros, is it lesbian or is it, what is it? We lose the power to describe this kind of emotional experience.

Chris: So when you realise what incredible varieties of sexual, forms of sexual enjoyment we humans are capable of, And of course there's the coalition leverage, which I used to call sex strike, and I don't see why I shouldn't carry on calling it sex strike, because it's a sex strike, but it's a strike against heterosexual sex, and it leaves

open vast amounts of other kinds of ****** enjoyment you can take pleasure in, as Morna points out.

So, in other words, this collective action against heterosexual sex is part of the explanation for the.

Camilla: I mean, the main emphasis of sex strike is to avoid privatised sex and to collectivise the whole experience of sex.

Chris: Yes, that's right.

Camilla: That is what it is.

Chris: Yeah, that's right.

Audiance member #3: I just want to make a small point about the red ochre.

As you know, I made red ochre.

Camilla: Wow.

How long did that take? Tell the car.

How long did that take?

Audiance member #3: It was pork fat and it was pretty stinky, but it came off really easy and then I just had basically greased my skin.

It wasn't a big deal.

Camilla: Yeah.

I mean, yeah, people don't want to take it off.

Audiance member #3: On the back of my hand, nowhere else.

Camilla: People won't want to take it off, Christine.

They'll want to replace the collar.

Chris: But Christie's got experience, haven't you, Christie?

Camilla: Oh, yes, but you're living in a Western culture which requires you to take it off.

Yeah.

Audiance member #5: And even looking around her, when she was sitting, there was a picture of one woman sitting on the floor.

She didn't seem to have much, there wasn't much red odor around her.

She hadn't sort of shed it.

They weren't like bits.

Camilla: I should've seen they're world experts at how to deal with that.

I don't think they'd be taking it off that much.

Audiance member #5: I like the idea that Maybe it does take about two weeks to get it off completely.

Camilla: Then you're just ready for the full moon.

Yeah, that would be nice.

Audiance member #5: We should try it.

It does take about.

Audiance member #6: Two weeks to get it.

Audiance member #3: My bath still has faint.

People were washing in rivers and stuff, I guess.

Camilla: Sorry, is it Ian or is it? Ian, did you want to say something?

Audiance member #6: Very briefly, yeah.

About five years ago there was a paper published on a South African site called Border Cave, which goes back about a quarter of a million years and from layers about 200,000 years ago, they're finding grass bedding material and what struck them was that at the microscopic level, when they were examining this in comparison to other levels, grass bedding material was full of microgranules of ochre.

So these people were going to bed with open bodies.

Camilla: After a party, I expect collapsing.

Audiance member #5: Okay.

Chris: Are we getting this one point, among other things, of course, of the FCC model is that when you talk about the origins of art, you'll still find people thinking, oh, art was on walls if you take painted the stuff and of course, we're saying, no, the art was on the body and all those animals that we see in the cave paintings, you danced, you were on the body, you were acting out being an elan bull, acting out being in Australia, being an emu or a kangaroo.

So instead of just static images on walls as the earliest art, you had us all singing, all dancing lines of women with decorations of animals and acting out and making the sounds of the animals and dancing like the animals.

So it's a much more...

vibrant and moving form of art, which the cave art, to be fair to the artists, they did their utmost to make those images of the horses and the bison and the mammoths to make them sort of move by using the, you know, the shape of the rock and also in the torchlight they would have simmered and glimmered, you know, as if there was some life in those creatures and of course, when you look at the cave art of Upper Paleolithic Europe, the animals seem, they do seem alive, but they can't have been quite as alive as actual women doing the dances with the stripes or spots or other markings, animal markings on the bodies.

So one of those slides that Camilla showed was wrong plus red.

So I don't know if you want to sort of...

Camilla: Well, we haven't gone there yet.

I mean, it was too much to cover today to start talking about wrong sex, wrong species as well.

We need to wind up, but we have Manchego wanting to contribute.

Maybe you can be the last to say the best for last.

Audiance member #2: With regard to the incest taboo being a male invention, that's pretty clear if you look at the way it's talked about about the patriarchs in the Bible.

Because Abraham married his half-sister, and she was his father's daughter, not his mother's.

He wouldn't have married his mother's.

Chris: No.

Right.

Yeah.

That's interesting, I suppose.

Camilla: Sounds a bit like parallel cosm paternal marriage.

Chris: There's no way the evolving human male could have invented the ancestor from a Darwinian standpoint, from a patriarchal ideological standpoint, you can maybe go along with it, but it makes no scientific sense whatsoever.

Camilla: Great.

We've got one more question from Lawrence and we need to find out.

Audiance member #2: It's just a practical question.

Could you tell a little bit about your new book with Jerome Lewis and when it's coming out and also maybe the talks that are coming up? Can you tell us a little bit about the talks in the rank that are coming up?

Chris: Right, okay.

So Yes, Jerome and I have spent far too long, about six years or five years, writing a book, actually quite a short book now, because Yale demanded we cut it all in half, because it was getting too long.

Anyway, it's called The Revolutionary Origins of Language, and Anish Kapoor has offered to do the cover.

It's going to be a big splash of red.

Everyone really, everyone who looks at the origin of language realizes it's kind of revolutionary, something really remarkable, it's language as we humans have it, is so off the scale different from anything that monkeys and apes do with their hoots and screams, it's just radically different.

Some kind of revolutionary event must have occurred and our argument is that there can be no such thing as a theory of the origin of language.

language only emerged as an aspect of all the other things, including the ones we've been talking about this evening.

So if you just think language evolved, because it's brilliant, it's a good way of communicating.

The reason why we don't have a theory, why Darwinians still don't have any theory at all to explain how on earth language could have evolved, is because they don't look at the wider context, which we've been looking at now.

Only within the context of a broader social, sexual, political revolution, going to get near understanding how language could have emerged and for that, we also need hunter-gatherers, including extant egalitarian hunter-gatherers to help us out, because just relying on the resources of our culture ain't going to get you anywhere, really.

So, and we're very pleased with that book, and as I say, it'll be it'll be this time next year.

Camilla: So, yes, I'm sure that we'll be doing more talks for setting up for when the book is like is a year ahead.

Yale takes a long time, but it's worth waiting for.

So, yeah, and there's later this term Jerome Lewis doing a talk with the Flourishing Diversity Manifesto, which has just been published this term.

So that will be.

Chris: So Jerome and I have published in Brazil, actually, with an English translation, I think, for the Flourishing Diversity Manifesto and it's an attempt to get indigenous rights activists sort of together with Jerome to be very good at, but provide some kind of...

Camilla: Plan for the planet.

Chris: Time for the planet, not so much for hunter-gatherers, because they know what they're doing anyway, most of them, if they're still managing to preserve their social system, but for people who think hunter-gatherers, the way that, I don't know, various strange archaeologists, they think hunter-gatherers don't have any organisation symbolism, they're simple people and all the rest of that nonsense.

So hunter-gatherers are geniuses at organising a society without without wealth and poverty and hierarchy and war, geniuses producing a workable, lovely human society full of joy, as Jerome keeps telling us.

Camilla: Thank you to Leetta and to Leoncia for your help coming along.

Chris: And also a fantastic attendance this evening.

Camilla: Thank you very much for everybody coming.

Camilla Power and Chris Knight
How to Resist Alpha Males (Seminar)
Sep 30, 2025

<www.youtube.com/watch?v=VAQN52Ttpy0>