

BITCH: on the female of the species (Seminar)

Lucy Cooke

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Lucy Cooke will talk about her outstanding recent book, BITCH, investigating the sheer diversity of female strategies and reflecting on the prejudices of the scientific patriarchy.

<https://www.youtube.com/watch?v=vz6c6kwqc-4>

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Good evening, everybody. It's a really brilliant event tonight because we have finally been able to bring Lucy cook the author of bitch here to radical anthropology new seasons of broadcaster documentary filmmaker. She's as zoologist by background. So she's going to be telling us all kinds of fun and amazing facts about all kinds of Critters and but a lot of what Lucy has to say is extremely relevant to the anthropology of human evolution, and I'm sure that that's going to come out in the discussion have focuses really on how the scientific or the non-scientific patriarchy has failed to see in front of it what females are doing in their strategies across so many species, but I'm going to hand over to Lucy.

Thank you so much. It's so great to be here. I as I say, I'm not an anthropologist. I'm a zoologist. I studied many many moons ago and I actually wanted to come to UCL. I applied to UCL and to Oxford and I wanted to come to UCL because I thought it was a lot cooler and but my Dad cried when I got into Oxford, there's no one in my family has even been to University let alone Oxford so I couldn't let my dad down. So so it's a real thrill to be here and I'm very honored to to be here standing here as opposed to sitting there. So anyway, so yes, bitch, that's what I'm here to talk to you about my latest book which is all about how female animals have been marginalized and misunderstood by the scientific patriarchy starting with this guy Charles Darwin.

So I mean it didn't actually start with Darwin it started with Aristotle actually because he was the first really to say that females were passive.

Miles were active but Darwin really ran with it in his his *The Descent of Man* which outlined his theory of sexual selection. He's difficult second album as it were the follow-up to *On the Origin of the species*, which obviously outlined the theory of evolution by natural selection and in in *The Descent of Man* he he talks about You know how the differences between males and females which really he saw males and females as very very different and, here's one of the quotes from *The Descent of Man* the males have almost all species have stronger passions than the females, hence. It is the males that fight together and sedulously display that their charms before the females and the female on the other hand with the rarest of exceptions is less eager than the male. She generally requires to be courted. She is coy So this is the idea that that females are are really a feminine footnote to the Macho main event. It is males that are the dominant drivers of evolutionary change and what's fascinating to me is Is, I mean, Darwin is obviously I studied evolutionary biology Darwin is a meticulous fantastic scientist a brilliant brilliant, man, but but yet he was blindsided by the culture of the time and

I think that's really if Darwin can be blindsided by by cultural bias. I think that sort of a lesson for us all really because I mean, he was an incredibly meticulous scientist and of course the problem with, or the effect of of somebody is brilliant and influential as as Darwin of branding females in the shape of a Victorian housewife, basically is that all the, for over a hundred years, the scientists that followed in his wake suffered from a chronic case of confirmation by us and we're heavily influenced by by Darwin's paradigm and of course, try telling a female spotted hyena that she needs to be passive and coy and she'll laugh in your face.

After she's biting it off we Now understand that that females can be just as dominant aggressive promiscuous and as males it's just that for for a long time scientists wouldn't or perhaps couldn't see them that way. Um, but thankfully things are starting to change and in the last Really sort of since the early 1980s, are understanding of females have changed and there's been something of a revolution going on and today. I'm going to talk to you about some of the females female animals and the scientists behind that that are studying them that are behind that Revolution and we'll kick off with the Lioness as the staff with the Lioness the Queen of the Jungle because this was really the start of my questioning because, I was taught at University. You know, I was I was taught standard sexual selection darwinian sexual selection and about 15 years ago. I found myself. I was making a documentary for the BBC about animal communication and I found myself.

Having trying to have a conversation with a lion.

In the Serengeti and I was with a lion expert and actually is many of you will know it's actually not that difficult to have a conversation with the line. All you need is the recording of Alliance raw something to play it out of and something to hide in preferably with wheels. So so there we were I was in the serengetios with Dr. Seifert who is an expert in Lyons and We got our recording of Alliance raw and the whole thing seemed so improbable to me that it was going to work because, first of all, I mean many of you all know the line alliance raw doesn't sound like the beginning of an MGM movie. It's nothing like as Majestic and that's actually a tiger apparently it's not a lion because it wasn't considered to be lying enough like that raw, the kind of Because they don't sound like that lines they sound more like this sort of sound that I don't know Boris Johnson probably makes it midnight when he's looking for cheese. It's a sort of a room noise. Um, so it's not in it this whole thing seems so probably this kind of tinny speaker and, this this sound that didn't sound like what I thought a lion's roar should sound like we started blasting it out into the glue, but it worked there was the sound of another lion came back in the Gloom as in the distance there was a rule and then for about five minutes that we got we played audio ping pong with these this this lion and it got closer and closer and closer until I got goosebumps and then out of the out of the darkness appeared not one, but three lines two males and a female and the males when they was nothing there that looked or smelt like a male line. They just went off but the female she lay in front of our Land Rover legs are Kimbo and pinned us to the spot for two hours and we were stuck we couldn't move

because she was there and so, during this very long wait I said to Dr. Seafood what's going on and he goes, oh she wants to meet with us.

He was German and I was like but isn't she mating with with one of those males that she's like? Oh, yeah don't as a female lioness she's incredibly promiscuous and she'll meet maybe a hundred times with multiple meals during her fertility period I was like, no, I didn't know that like no one told me that before that was news to me. And so that was the first time I was like, whoa, that is not what I was taught. That's not that's not what how I understand things and of course now we know why the female lioness mates with multiple males. She's not just being wanting for the sake of it. She's actually it's a strategy and we have this woman to thank for for understanding what that strategy is, and this is Sarah Blafford who I'm sure all of you are familiar with and if you have if you aren't familiar with Sarah Black for herdy, then go to the library immediately because she's a brilliant. She's that she's, she she's a sort of pioneer really in in a dressing these stereotypes and really, the first One of the very first scientists to sort of go into the field and have the same every preview to the same education as as men and take her knowledge into the field and her curiosity and to ask questions from a female perspective. And here she is in India studying language, you can just make them out and she noticed she'd been sent out to India to she was he was looking at infanticide and because they've been reports of males of male and fantaside and she noticed that also that the females were were soliciting sex with with multiple males and instead of just You know brushing it to one side as An Inconvenient anomaly.

She was really the first person to go.

Well, that's really interesting. Why is that and she found that it was as I'm sure many of you here already know she found that it was it was connected with the infanticide and that male language, are when they when they come into a territory they may well be infanticidal and Kill The Offspring of the females that are there and that's to force the females into Easter so that, if they're females are nursing then they're not available to mate with and so by killing the babies that forces the females into he's just they're ready to have their babies great strategy, but the females have a counter strategy and that's to make with with multiple males. And so therefore if the males have mated recently with a female, they're less likely to to kill their babies. So she was really the first person to to show that females are just as sexually strategic as males and that strategy often includes mating with multiple males and So there was some resistance to her Theory when it first came out. It's now known that there are, I think there's over 50 or 60 species.

Where females are mating with multiple males in order to? To prevent in fantaside and in some cases they're doing so extremely enthusiastically there was a study of Barbary macaques where there was one female was recorded having sex every 17 minutes with them with every sexually mature male in the group of which there are 11 which which sounds positively exhausting but you'll be pleased to know that females do gain some pleasure from this. This is a monkey's o-face this this is the only illustration in my book in fact, and it was in a paper that was written about and the orgasmic potential

of macaques. This is the same the orgasmic face of a male or the classic round mouth round face that both males and females Um a display when when when having sex and when when when when climaxing, but the female orgasm Sarah Blackford hurdy writes about this is another one of those areas that was completely, that sort of dismissed. It was the idea was that the only humans that females could be orgasmic and the only reason why I was because of the homologous development this the same development trajectory that we have with males. And so basically we owe males are orgasms which is an astonishing thing bold thing to say, but but they have subsequently been it looks like there and it was thought that only the only human females would would have orgasms but now thanks to various studies. It's thought that other female primates do which makes sense because if they're having lots of sex then it makes sense for them to be rewarded the idea that females wouldn't get pleasure from sex seems extremely Victorian.

So we have these Sarah blackfordheardie to thank for that. So when obviously when I was researching my book, she was one of the first people that I wanted to get in touch with and I reached out to her and she said yeah come and visit me on my Walnut farm, so I went to go and see her and she was just amazing. She baked me a piece.

She's like she listened to my last but they got my last book on audiobook and she goes. Oh, I know you like vultures so I baked you a vulture pie. It doesn't have actual vultures in it.

It was a chicken pie, but she put plastic vultures on top, but she was just incredibly warm and generous with her knowledge and I'm incredibly grateful to her. I mean she is an astonishing academic.

You know, who's really revolutionary completely brilliant and just incredibly generous and, and yeah, it was was absolutely wonderful and even better than that when I Reached out. So she said oh you might be interested in my housemates and I certainly was because she she was staying with her at the time with Gene Altman and Mary Jane West Eberhard and together they call themselves The broads and they are the rabble rousing matriarchs of modern Darwinism really these these women, for the scientific philosophy with hard hard one data and one basically and really redefined how we how we understand what it means to be female. There's a fourth member of that and they meet every year actually to be honest with you. I don't know I think I might have been privy to their very last cerebral Jamboree because after that was 2019 and then covid hit I mean, pretty much and so since then, I don't know whether they're all still meeting, which is a great shame. I think they obviously they meet remotely but there's a fourth member of their Clan and that's Patricia go-arty. Who's also just this absolutely incredible scientist and I didn't get to meet Patricia because she wasn't there but this is how I would see her her lovely warm smiling face on Skype and we spoke a lot over Skype when I was writing the book. And again, she was incredibly generous with her knowledge. Absolutely. Brilliant woman and, she she that these women that they referred to as feminist Darwin. It's because, they're not saying that Darwin was all wrong. It's just that he viewed the world through a Victorian penhold

camera, and we're now able to see the Animal Kingdom in its Technicolor version and it's all the more interesting for it and Patricia is has been revolutionary in her own way many many important experiments that she's done challenging this this this sort of darwinian Paradigm and one of her most her earliest Works have was with birds.

with Eastern Blue Jays and eastern bluebirds sorry and we think of songbirds really is the very picture of monogamy, you often see songbirds, they're nesting outside your house and, there'll be a male and he'll sing for the female and then they'll they'll build an S together and then together they'll raise the chicks and so very easy for us to to imprint our values on them and they look like it's just a lovely harmonious monogamous situation that's going on there and Patty was really the first one of the first to sort of thing. Well.

I wonder if it really is all sweetness and light as it seems to be. So what she did was she co-opted forensic technology and was the very first person to to use DNA fingerprinting on a clutch of eggs and to see whether well, do they do they all have the same father? And she found that they didn't and that a clutch of eggs frequently had multiple fathers. And this was a was a was a, a revolutionary finding and when she presented her her data as an ornithological conference a very famous ornithologist Steve emlin.

In fact said to her. Oh that can't be the only the only way that that would be possible is if the females were raped and Patty was like well, I don't think so because, it's impossible for female songbirds to be raped because, the male and female both have a cloak of the male doesn't have a penis in order for the male to inseminate the female. He has to balance on her back precariously line up cloacas if the females not into it she can just fly away at any point. So so the idea that she's being in also a Patty quite rightly objects to that terminology if the females are being coerced, it's just it's just not possible. There are species ducks. For example where coercion does occur, but, it's not possible in songbirds.

But it took that that was that was how the that that's how sticky these these these stereotypes are the even when presented with hard data that it can't be true and that was that the idea that females were being coerced was was was prevalent until other are the female ornithologists basically put radio trackers on the backs of female birds and track their movements and saw that they were flying into other males territories and soliciting sex. And so it was actually the females were were being strategic and, it's patties far as passes concerned. It's really obvious. You know, why put all your eggs in one basket it's it's much more you're much more likely to find genetic combatibility or good genes. If you if you if you invest your your eggs in in several different fathers and really this work and then we now know that only seven percent of birds and monogamous and even swans are Unfaithful. So and it's probably even less than that. So it sparked a polyandry revolution and we now know that lions and lizards and lobsters are all the females have a strategy for mating with multiple males.

So that's promiscuity.

Males females are just as as we'll make with multiple males just as as much as as males do but what about competitiveness and aggression? That's something that we see is an unfeminine. You know, it's only it's thought that males are the other competitive and aggressive sex. Well, that's not true either. I'd like to introduce you now to the to the animal kingdoms most murderous mammal, which is actually a female It's not me. It's actually it's the meerkat the much-loved meerkat the star of Sunday night. Cozy Sunday night Telly and meerkats. There was there was a survey that was done of the of a thousand mammals looking at which mammal was was most likely to be killed by a member of its own species. And number one was the meerkat number two is humans. So And that's because meerkat Society is predicated on ruthless competition between females they live in family Clans. And the dominant female doesn't want any of the other females to reproduce you. She wants to dominate those resources. And so if she will if any of the females does then they will be evicted from the clan and that's basically in the Kalahari that's tantamount to murder but they're allowed back back in if they will wet nurse, they're murderous and they're murderers babies instead. So that's that's pretty brutal, but it's very effective strategy. It means that she's able to put all of her energy.

Into into having pups and not necessarily nursing them and that particular structure is called Cooperative breeding.

She always sort of seemed like a very strange euphemistic way of describing Society doesn't seem particularly Cooperative. It's more like reproductive despotism. But but yeah, it's incredibly successful strategy and it's it's down to female competition.

Of course, the queens of the Co-operative lifestyle are the social insects and they've really taken it to the next level where you just have one breeding female and none of the other members of The Colony will breed.

They're just they're just supporting their the Royal reproductiveness and probably the most successful of all the termites. In fact, I think I'm just I can never believe these statistics but a single queen can lay over 20,000 eggs a day and is capable of producing 146 million termites in her lifetime.

Which is which is incredible and obviously so, in order to do so, she she her abdomen swells and, they have these are these other casts of of workers that are that are supporting her in that extraordinary reproductive endeavor and it's, the social insects of being inspired, inspiration for sci-fi dystopian societies, and it's always just comforting that they are they're insects. They're not mammals. There's nothing like that. Nothing's really creepy and strange like that happens in mammals. Well, it does actually that's the thing and there is a mammal that is classed as being you social and that is this character here which many of you will know anybody here.

Naked mole, right? Yeah exactly, which is what one of the strangest and most fantastic creatures on the planet it often tops the ugly animal charts and Chris Fawkes who's here in London whose studies them? He himself describes them as a penis with teeth, which, I think doesn't say much for Chris actually, but but anyway, he's that's that's his words. Not mine.

Anyway, I was really I've been fascinated with naked marks because they're fantastically weird, but you never get to see them because they live in colonies underground in East Africa and really dangerous parts of East Africa as well. So they're incredibly difficult to see in the world and I did eventually manage to meet one and that was in a very hot cupboard in East London.

where Chris is created a facsimile of their underground life in in this very warm cupboard using a load of old Tupperware and plastic tubing which is a fantastic Heath Robinson Affair, but has meant that he's able to observe their extraordinarily strange society and they do have one female that only one female that reproduces at a time. So, I mean they're colonies can be up to 300.

You have one female should have two or three male mates that she reproduces with and none of the other column. No other members of The Colony will breed they can't because she's suppressing their reproduction. They haven't gone through puberty, which is astonishing. I mean, it's an incredible feat. So what Chris has been trying to work out is how does she do that what she doing and what he's worked out is that she basically does it by being a big Royal bully.

So unlike I've got a little video here see if this works. Here we go. So these are the female exerts are dominant by physically on the move the whole time patrolling The Colony and then walking over or pulling and shoving biting. Look.

I'm I'm the boss here and then clambering over her subjects and that's exerting her dominance in this kind of really aggressive way and that that he thinks that's suppressing their their hormones and meaning that they they don't they don't sexually mature and of course this system works all the time. The queen is dominant and she's going round on a big Royal bullying tour. But if she becomes weak and can no longer do that then all hell breaks loose basically because females will then come into go through puberty become sexually mature and then start fighting to the death because this is their one chance if they get to be Queen this is their one chance to reproducing in their lifetime. So and he said all gets terribly Game of Thrones and this Blood splattered all over the clit tubes and it's all really horrifying but but I mean, again incredibly successful.

One the females are able to have litters of up to 27 because that's all they're doing is is reproducing all the other members of the society are are caring for their young and one female was documented as having more than 900 pups in in 24 years, which is astonishing. I mean, this is a, this is a creature this size. I mean 900 and a lifetime and they have they also they they like the Dorian Grays of the animal kingdom of the mammal Kingdom because they don't age the Queen's don't age. They're Tila mirrors don't shorten like there's there's sort of You know or Silicon Valley is obsessed with aging and reversing aging and they're sort of various Labs. They're studying naked mole rats, but the, the face of Eternal youth ain't pretty but it's available to you if you live underground in Kenya in a despotic society, but you'll be pleased.

To leadership and dominance isn't always quite so brutal.

These are orcas and they are as many of you all know. They're basically danger Dolphins. They're the sort of souped-up members of the of the dolphin family and they live in family pods. And it was always thought that is a great example of bias. It was always assumed that the males were the leaders because they're the bigger ones and, of course the males are in charge and but now we know that it's not just that it's not the males that are the leaders of the Orca Society. It's it's the females. In fact, it's the post-menopausal grannies that are the leaders of orchest society and this is really interesting because menopause is incredibly rare in the animal kingdom and for a long time humans were thought of as menopausal Freaks and then the only other the only for a long time it was the only other animals that went through menopause were in zoos. Basically there were various gorillas and chimpanzees that have been occupant documented living beyond their their reproductive shelf life and so there were people that suggested that there's the scientists that the proposed that that women would the same that we were basically propped up by modern medicine and regular meals and that we should be bowing out, round about now alongside our ovaries, which is astonishing but that was the case so but it's we're not alone. It turns out there are other and there's probably more because it just hasn't been studied. But we do know that there are four species of tooth whale that all go through the menopause and a females all live beyond their reproductive Fitness and they are orcas short film pilot pilot whales narwhals and beluga whales and, it seems quite random. Doesn't it that there be us and these guys but it looks like it's to do with the sort of it's it's it's the way that the society is. What's interesting. Well orcas are the ones that have been studied the most and interestingly about August Society these these pods that neither the males nor the female's dispersed.

So they stay in these these these family pods and really so the females You know don't don't compete with their daughters for over resources. They don't rather than the meerkats and sort of evicting them or bullying them into not reproducing. They they're basically bowing out of the competition and instead investing their their energy and supporting but daughters actually in particular their sons because if they if the females invest a lot in a son that becomes really big and sexually successful then then his offspring will be in other pods and won't be an energetic drain on her pot. So the females actually invest preferentially in the males, but they they stop reproducing and so they can invest in their sons and not compete with their daughters which obviously sort of Falls in line with with Kristen Hawks grandmother Theory and has and at Exeter Darren Croft to Exeter has is the one who's been studying that but you might be wondering how do you study menopause in a six-ton swimming torpedo with teeth? I like how do you do that? How do you how do ? How do you how do you you can't take blood samples every day. So but what you do is is you take fecal samples.

You get you gather fecal samples? I should say rather which is here. I am that's me with a tupperware box of orca feces. Obviously, it doesn't arrive like that. That was just where it'll be collected and to be sent off to the lab to have the hormones studied in it. But even I arrived on the boat with Dr. Giles who's the official Orca

pooper scooper? Who's the one who collects the Orca feces and She handed me a net and I and I was like she goes don't worry whales do floaters big ones and we've got help and the help in finding the Orca feces was in the shape of Eber the which is a this lovely dog from as a former Street dog from Sacramento that have been rescued and then talked to sniff out Orca poop. So that the Orca poop that in the Tupperware was the test smell that it was used to train the dog up and then and EBA would that's either hard at work in her office sniffing out Orca poop, which I thought was incredibly charming and she could smell obviously from an article mile away much better than any of us could but I was incredibly moved by orca society and how inclusive it how inclusive it is orcas are extraordinary creatures. They have amazing brains that are really a magnet for superlatives. They they weigh 7 kilos and they have more surface area for for cognitive thought than than any other animal on the planet and they also have this extra lobe a paralympic lobe that it's only found in dolphins and orcas and where it sits in the brain.

It suggests that it's that they are processing emotions and empathy in a dimension that we can't possibly understand and they are incredibly cohesive and close as as creatures and this this individual here has scoliosis.

It has it has a bent spine.

You can see it's got a bent Fin and you might expect that individual to not live as long as the others in the Pod, but it was documented as living along and healthy life because it was cared for and supported by the matriarch and the other members of the of the society. So I found the orcas to be incredibly inspiring and you sort of just wish that we could evolve a paralympic globe maybe or at least our leaders could could evolve a paralympic lobe and be as supportive, but what about primates? You know Patriot we'd sort of led to believe that patriarchy's burnt into our DNA and, here's a quote from 1970 from Lionel tiger primate female seem biologically unprogrammed to dominate political systems.

Well, I don't need to tell any of you you'll all know that that's complete rubbish and that, most primate societies that the females have their own natural line and that there's that they, that's that's incredibly powerful. It's off. It's often the stable sort of nucleus of the society and You know any any of you go out in the field with primatologists, they'll tell you often. If you could spend your day chasing monkeys and you want to know which way you want to keep up with them.

You don't follow the alpha male you follow that the alpha female if you want to keep up and they, they there's a huge amount of politicking going on especially in baboons.

But but yet what we are the stories that we like to tell and the stories that we like to tell our children other that males are in charge, right? You know, so you you'll be familiar with this character. This is King. Julian is a ring-tailed lemur.

He was the king of Madagascar in the film Madagascar.

Thing is you go to Madagascar. There's no sign of King Julian because because ring-tailed lemurs as many of you will will know our female dominant Society. Of course,

it was Alison Jolly brilliant primatologist Alison Jolly who works that out back in the 1960s. I think it was that she was she was really a Pioneer in all of this and I went to Madagascar to to find out for myself what the ringtailed Lemurs were like and this is what I found them doing.

There was sunbathing so so when they're in the in them are it's a shame you here we go. So there you go. Look you can see them sunbathing. They they when they they wait they sleep in these caves are really cold at night and then they come out in the morning and they like to soak up the sun Like A Boss. Look at that like it's so fantastic and, God forbid any male would take the best sunbathing spot because the females are just whack them if the males are eating something that the females want to eat. They'll whack them they are, as Alison Jolly said males are frightened of females. They are very aggressively dominant and they do the majority of the scent marking and the patrolling all these sort of roles traditionally associated with males and it's not just the ring Tails while I was in Madagascar.

I was I was lucky to just to get up close and personal with quite a few different Lima species and all of these species the feet. They are they of the 111 species of Lima. I think 90% are female dominant and whether they are like the fantastic.

injury which is the biggest of them all that's in the top left there, which is actually In monogamous pairs or whether they are in sort of, different different types of polyanges or polygynous societies. The females are still dominant. So it's very interesting and of course.

You know, they don't look like primates but we know that they are primates so you can sort of see I thought I was really fixated by their by their hands. You can really see they are of course our most ancestral cousins and but, they are they are primates and because they are they because 90% of the 111 species are female dominant. But also the other prosimians are also female dominant there. There's been two papers that have been written. That's that both from the taxonomic side. But also Rebecca Lewis who studies the behavior of lemurs that that suggests that the ancestor of humans and of the ancestor. Sorry, the ancestor of all primates must have been female dominant because these all these, these these all the proceedings are mostly female dominant.

But yet, that what we think of when we think of of primates we think of, male aggression. That's that's the story that we're most familiar with and the and it's and it's chimpanzees that are obviously that have been the sort of the traditional model for for human ancestry. But, I don't need to tell you guys in the room because many of you will already know that we have another closest relative the bonobo.

This this this sassy character. I met in San Diego Zoo. This is Loretta. I went to go meet with Amy Parrish who was amongst the first to propose that the bonobo Society was very different from chimpanzee society. And where chimpanzees are basically considered to be patriarchal and warlike bonobos are actually matriarchal and peaceful and Loretta was very much part of that Discovery. Loretta is the matriarch of the of the San Diego bonobos obviously in the wild. It's a slightly different setup. The females are are often dominant, but not always dominant.

But nevertheless it's generally accepted that that the females are dominance the dominant sex and what's interesting is that like chimpanzees? The females are smaller. So and also they they're the sex that disperses so You know.

They but when they they are able to sort of form strong bonds where in whereas chimpanzees don't and of course they do so by having sex with each other. So the female's have what's called GG rubbing and Amy shows that they get a lot of fun out of it. And so and, when a female joins a group she will go up and sex is basically the social lubricant that forms bonds and prevents them from competing with with one another and so they form this very strong Sisterhood, which means that the males don't overpower them and don't don't dominate them.

So basically female bonobos have have overthrown the patriarchy through ecstatic same-sex frottage, which is one way of doing it and, it's just really fascinating because it just goes to show that, these ideas that that dominance.

Is is related to sex it's, clearly what sex you are rather than sex as in sexual sexual activity is clearly, completely not the case and it's obviously got a lot more complicated than that to do with the environment and all sorts of things. But what so what's really fascinating is anthropologists you can argue forever about which makes the best model for Human Society a big fantastic to know what you think whether you think it's chimpanzee or do you think it's been OVO which is it which is the which is the better which we more likely to be like well, I guess we'll never really know but but what this shows is is the flexibility of dominance but also the flexibility of sexuality Because Franz taval and Amy Parish they say that that basically all bonobos are fundamentally bisexual. So I think that's really interesting that they that they have that that that's that flexibility and that really was interesting to me because I went in search when I was writing this book of sexist bias. And then I stumbled upon another form of bias which which trip me up and I wasn't expecting to find and that's heteronormative bias and here's a great example of that. This is a lasan albatross.

This is on the island of Hawaii. And these Albatross have been studied for over 50 years and As a colony there and what's interesting about them is is that albatross in seen as that sort of picture of monogamy, that they, they they often do make for life not always but they often do and the female will lay one egg and it takes them six months to raise the chick because it and you've got to have strong partnership in order to do that because it involves tag teaming forays for many thousands of miles in search of squid to feed the chicken. It takes some six months to fledge. But what was interesting about this colony and others is that there was a phenomena where they'd find some Nest had two eggs and completely impossible for a female to lay two eggs is two two energetically expensive. So what's going on there, so lots of sort of tortured explanations of why they would be these two eggs what was going on and eventually Lindsay young who's the scientist in the background of that photo there. She was like, well, has anybody checked their male and female on these nests? You know and no one had everyone had just assumed for 50 years that of course their male and female on the nest that they look the same course they are. Why would they be anything

else? Well, she took feathers from every single nest and to her complete surprise. She found that a third of the nests and the colony were female female pairs and she was so shocked by her discovery that she did a lab work second time. She didn't get all the feathers and checked to the second time because she thought no one's going to believe me No One's Gonna believe that this is the case. And basically what happens is in this colony in Oahu, it's an it's a relatively new Colony most of the lay sand Albatross Nest on one of these atolls nearby and so and the females are kind of pioneers in every sense of the word that they they are the sex that disperses. So in these new colonies there tends to be more females than there are males. And so the females that are there are basically they'll they'll they'll they'll mate with, any available male that that's up for it and then they'll get together with another female in order to raise the chicks and they'll both lay an egg and not both can be not both will fledge but both eggs won't hatch because they can't so it's it's random actually which one she thinks that they they're not really able to tell which ones they're egg. But but some of these some of these females will We'll mate with the feet. Well, we'll partner with a female one season and then maybe the next season they'll partner with a male but some of these female Partnerships just work and they they last for for many years and there was one female that I met there who had been with her partner since the study since Lindsey had been studying and it was 17 years that she'd been with her partner and it was just it was a relationship that just it just worked and so they would get together and they, they spend their six months off on the wing and then when they were greet each other they would do all the dancers and the mooing and the cooing and all of the preening and mounting that creates all that bird oxytocin, which is forming that Bond and they'd had eight chicks together and three grand chicks and they were amongst the most successful pairs on the colony the different males.

It was it was random which male it wasn't always the same male that they would use as a sperm donor, but, so I thought that was Absolutely amazing and another great example of just that the plasticity of sexual behavior and of course the more we look into it, this idea that that Men Are from Mars and females are from Venus and pink and blue Brains. It's just it's a fantastic piece of branding but the more we look into it we're finding the more that that male and female brains are basically the same. I mean another great example is is the urge to nurture the maternal Instinct this is something that, we're told is something that's peculiar to females and that we're born with it, . Well, we now know Catherine Dulac at Harvard Who studies mice and Lauren O'Connell who's at Stanford and studies frogs? They found exactly the same neural architecture that triggers the nurturing Instinct in mice and frogs. It's exactly the same and likely Catherine Dulac says that it'll be the same in humans and it's exactly the same in males and females in it's an instinct it for nurturing and it needs to be triggered. So there you go. Another one of those great differences between male and female brains that turns out to be the same and of course it makes sense.

When you when you understand.

You know, it makes sense that that we would be, the more or less the same and it's most obvious, of course in animals that are able to change sex and these are in no many fish. They're one of the 500 species of fish that's able to switch sex. And of course, they're famous from Finding Nemo and in in an Emily fish the male and female do form a kind of a monogamous partnership actually, but in and you're having an and I can never say this in an anemone, you'll have a male and female and then there'll be several immature males. But if the female which is she's the dominant sex, she's bigger than the male if she's taken out by say a hungry Barracuda. Then the male will change into being the dominant female. Her male partner will change into being the dominant female and one of the immature males will become sexually mature and become her partner.

Which of course means that in a biologically accurate version of Finding Nemo in which Little Nemo loses his mom and there goes on a big adventure and is reunited with his dad at the end of the movie would be a very different film.

and but what's really interesting is is Justin Rhodes, who's who I spoke to who's at the University of Illinois. I think who studies this this change from from male to female and he's got like a whole lab full of Anemone Fish and he was telling me that what's fascinating is that the fish basically as soon as you remove the dominant female the Mayhem male partner starts behaving like a female and it's recognized as a female by the other fish.

But the gonads take up to a year to change from being testes to ovaries. So what's really fascinating about this is that, obviously we Define sex biological sex by the gonads. And so in this case the fish that gonads are still male and but I said to Justin what sex is that fish? And he goes well, if you ask the fish the fish would tell you it's female so so it would seem that certainly in the fish in the enemy fish that these gender identity which is gender is something that we don't consider the animals have but in this case you can ask the fish what sex it is what gender does it think it is and it would be different to to its biological sex. So so those systems may be very independently regulated.

Which is really interesting. So there you go. There's some of the b***** and bitch and they really sort of outdefy outdated binary stereotype start binary stereotypes of of bodies brains and behavior and they teach us that that sex is no crystal ball. It's neither static nor deterministic. It's a flexible trait just like any other that shaped by The Peculiar interaction of shared genes and the environment and, the time is perhaps come to to ditch damaging and frankly deluded binary stereotypes because the female experience is variable highly plastic and refuses to conform to archaic stereotypes and perhaps the more we appreciate that fact, the more we will understand the natural world and perhaps empathize with one another as humans. Thank you very much.

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Lucy Cooke
BITCH: on the female of the species (Seminar)
March 28, 2023

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