

Getting Curious with Jonathan Van Ness & Laura Simone Lewis

JVN [00:00:00] Welcome to Getting Curious. I'm Jonathan Van Ness and every week I sit down for a gorgeous conversation with a brilliant expert to learn all about something that makes me curious. On today's episode, I'm joined by Laura Simone Lewis, where I ask her: How does it feel to be a great ape? Welcome to Getting Curious. Last June, we recorded our incredible—if we do say so ourselves—Pride in Nature series. It was so exciting to do. And when we did it, we got to speak to Eliot Schrefer about queer behavior in the animal kingdom. And then we got to talk a little bit about great apes and bonobos, but it really cracked open the Faberge egg that is my curiosity about great apes. And so in walks Dr. Laura Simone Lewis, who researches how social cognition has evolved in chimpanzees, bonobos, and humans. She earned her Ph.D. from where? Harvard! Last year. And is currently a postdoctoral fellow at the University of California, Berkeley. Okay, first of all, like, that resume. It just gave me chills on my queer triceps. How are you, Dr. Laura Simone Lewis?

LAURA LEWIS [00:01:03] [GIGGLES] Hello, hello, hello! I'm so happy to be here. I'm really excited. Thank you so much for having me. I'm honestly so excited to talk about great apes with you.

JVN [00:01:12] Oh, my God, me too, you. And also, just this smile, your earrings, you're fucking stunning, your hair! Like, you are just, like, I didn't know you were a doctor and a model! Like, someone get this doctor a modeling contract yesterday.

LAURA LEWIS [00:01:24] Thank you so much!

JVN [00:01:25] You're literally stunning. I cannot stand it. Okay, but what I wanted to know was: what is it like to be a great ape? And there's no one better to talk to you about this. You're a literal expert. It encompasses, like, everything I need to know. It feels like they are, like, our literal, like, favorite first cousin, like, in, like, the animal kingdom or something, and you just can't wait to go see them or whatever. But then sidebar, we're also probably, like, fucking them up? But anyway, we're all about it. We love. I need to understand more.

LAURA LEWIS [00:01:51] Absolutely. I think the number one thing that I would say about great apes is that they have a lot of feelings. They have a lot of emotions. They're really smart creatures. They're really intelligent. And so I think historically, we can tend to think about animals as kind of separate from ourselves. As, you know, "We are these humans – amazing, unique creatures that think in these really special ways and use tools and have culture and language and warfare. And that's only special to us," right? That we as humans are unique in that. And that's just completely not true. Over the past, around 60 years, we've been discovering that other great ape species have culture. They have their own systems of communication that are similar to language. They use gestures, they make all types of vocalizations. They have really deep social relationships that last decades with each other. And so all of this tells us, yeah, that they're really sentient, that they really know a lot in terms of the world around them, that they're really curious, just as you are, Jonathan, [JVN SOFT GASP] about the world around them. And so in a lot of ways I think that makes them really similar to us as humans. They are our closest living relatives on this planet and they are way more similar to ours than I think we've ever historically realized. And we're just starting to really uncover all of the ways that they're so similar to us.

JVN [00:03:10] Also, like, I just got a little self-consc[ious] because I'm, like, "Okay, you're literally, like, a Harvard educated scholar," like, but we're going to need to go to like a little bit of, like, maybe, like, eighth grade or, like, seventh grade, like, level. We're going to take it back. So just bear with us for a second.

LAURA LEWIS [00:03:24] Let's take it back.

JVN [00:03:25] What makes a great ape a great ape?

LAURA LEWIS [00:03:27] Beautiful. Yes. Let's start there, and at the most basic level. And honestly, I think—and we can get into this later—but I think this is honestly a failure of our education system, not to just lay out the basics of our primate, *beautiful* primate family tree. So let's do that now. We live in a primate order. This is a group of animals called an order: primates. And there are three main groups. It's a little bit more complicated than that, but I'll just tell the three main groups. There are lemurs who live in Madagascar. Monkeys who live kind of all over the world—in the Americas and also Africa and Asia. And then there are the great apes who live in Africa and Asia.

JVN [00:04:08] And then also [NERVOUS LAUGHTER], *order*, like, that's that whole, like, genus, species, like, order, like, and then, what's, like, the very first one when it's, like, you're, like, an animal or you're, like, a fungus. Like, what's that very first one?

LAURA LEWIS [00:04:19] Kingdom.

JVN [00:04:20] Kingdom. Yes!

LAURA LEWIS [00:04:21] Kingdom. Yes, exactly, yes.

JVN [00:04:22] Okay, got it.

LAURA LEWIS [00:04:23] Kingdom, phylum, class, order, genus, species. Yes.

JVN [00:04:26] And then are we... are we great apes? No.

LAURA LEWIS [00:04:30] Yes. Yes!

JVN [00:04:31] We are.

LAURA LEWIS [00:04:32] That's great. Yeah. Okay, so now that we have the lemurs, monkeys, apes, let's jump into the apes. Let's dive into the apes.

JVN [00:04:37] [HOLLERS] [CROSSTALK] This is going to be so much fun! Yes!

LAURA LEWIS [00:04:39] All right. We're in there. We're in there! We're in the apes, right? We're in this group of apes. There's two groups within these apes. Are you taking notes? I love it! [CLAPS] [JVN AFFIRMS] All right. Within the apes, there are great apes and there are lesser apes. Lesser apes are gibbons. That's kind of their, their name, generally. Gibbons. They're these beautiful, slender creatures, they live throughout Southeast Asia. They have these long

arms and they do what's called brachiating. They do this like monkey bar action through the trees. Sometimes if they ever run on the ground or, like, run up with their arms up in the air.

JVN [00:05:12] Oh yeah, I've seen that.

LAURA LEWIS [00:05:13] Yes, they're so amazing! All right. So those are lesser apes, those are gibbons. On the other side we have great apes. And yes, you're right, we as humans are great apes. So there are five main types of great apes. Humans are one of them. Do you want to try and guess the other four?

JVN [00:05:29] Umm...yes? Okay, the other four are... gorillas!

LAURA LEWIS [00:05:35] Beautiful! Yup.

JVN [00:05:37] Um, is it, is it, like, chimpanzees? [LAURA AFFIRMS] And bonobos?

LAURA LEWIS [00:05:42] Yes, exactly. One more!

JVN [00:05:45] I cheated on those because I have those in front of me. Um... so chimps, bonobos, gorillas. Who's the fifth member of the Fab Five?

LAURA LEWIS [00:05:55] I'll give you a hint. They're orange.

JVN [00:05:57] Orangutans!

LAURA LEWIS [00:05:59] Yes! [APPLAUDS] Yes. Right. Exactly. Exactly. So that is our great ape family. And that's actually the term that we use, is we're a great family, which I just think is really beautiful. And we should be thinking of them as our family members because they are endangered. And actually maybe we can start here: all great ape species are endangered or threatened. So that's one defining feature of great apes. We as humans are increasingly encroaching on their environment, stealing them for the pet trade, poaching them. But there's also lots of other beautiful, defining features of great apes. So gorillas: there are two species of gorillas. They're herbivorous. So they mostly eat leaves. They're these big, large body creatures. You've probably seen them. They have big, black fur, these broad chests. [JVN AFFIRMS] The males, when they become dominant, they get these silverbacks that are really beautiful.

JVN [00:06:51] Yes!

LAURA LEWIS [00:06:52] Yes. And they live in groups of about 5 to 10 individuals that we now call one male unit. And that really is because there's one dominant silverback male typically, and then a few females and a few of their babies, a few juveniles. So they live in these small family groups in the Congo Basin, in Equatorial Africa, and they're huge! They're the biggest great apes. They can weigh up to 430 lbs. So they're, like, giant.

JVN [00:07:21] Not to go straight into Morbid podcast, but, like, in the single male units, like, if one of the moms has a boy, is he mean to the boy? Like, does he have to, like, get the hell out by the time he goes through, like, puberty or something or the dad will kill him?

LAURA LEWIS [00:07:35] Yes. Oh my gosh. That's a great question. Typically not. But there are sometimes instances of infanticide—it's what it's called—where for some reason, typically the male will kill one of the babies potentially, if a female, there's a chance that she's had this baby with another male, for example.

JVN [00:07:51] Oh!

LAURA LEWIS [00:07:52] Yeah, and one of the pioneers in studying gorillas, Dian Fossey realized that after they kill, the males kill, these babies, the females go back into heat, and are ready to reproduce again. It is a little morbid, I agree. But it is an interesting tactic that we didn't know until recently that not only gorillas but also chimpanzees use as well. So yeah, that's infanticide, a little bit of a morbid side.

JVN [00:08:16] But aren't the moms, like, dev, the moms are, like, dev, right. Like they, they, aren't they dev?

LAURA LEWIS [00:08:21] Yeah. Absolutely. Absolutely. And there's so much we're learning now about mothers and the death of their babies. Great apes are incredible in that they do understand something about death. We are just at the cusp of understanding kind of all that they know about death. Right? They, like, look longer, for example, at skulls of their own species than other skulls. They will observe dead bodies of their species a lot. And then the mothers—this is, again, a little morbid and devastating, but I think tells us a lot about their sentience is: if a baby, for example, dies for, for whatever reason, you know. Infants in the wild, it will happen that they'll die. Often the mother will carry around the corpse for days or weeks at a time. So they'll just keep carrying this baby. They know they have an idea. They act differently around it and they do different behaviors with this baby when it's dead versus when it's alive, which tells us that they *know* something about it being dead, but they'll still carry it with them. And we think this is a mourning process of some sort. Again, we're just at the cusp of understanding this. New research just came out last year, that this is a very widespread behavior, right, that many apes do carry their babies after they've died. So I think that really shows us something about what they're feeling, about what they're thinking, that they can understand something about death.

JVN [00:09:39] So what's the deal with orangutans – they're those cute orange ones?

LAURA LEWIS [00:09:43] Yes, they're the orange one. So they have this, like, orange reddish, really shaggy hair. Right. You'd be really long and fabulous. Like, when they walk around at, like, swings and it's, it's just beautiful. And they can be up to 200 lbs. So they're also very big creatures as well. Really, really smart. So there are three different species of orangutans. They live in Borneo, in Sumatra. So in Southeast and Eastern Asia.

JVN [00:10:08] Only there?

LAURA LEWIS [00:10:09] Only there! Only there. And they're the only ape that lives in Asia, actually, now in current day.

JVN [00:10:15] How interesting. So that was like a Pangea thing, like they just, like, isolated on those islands or whatever and that's why they ended up there?

LAURA LEWIS [00:10:22] We think that there's been a number of different ape species in the past that lived in these areas. They're just extinct now. They're not alive today. We can't study a whole lot of their fossils because they live in these rainforest and wet forest environments that actually don't preserve fossils very well. So we actually don't have a great idea about all of the ape species that are extinct today, but that lived in these areas. But today, orangutans are the only ape species that live in Asia, and they live in Borneo and Sumatra, in these big, lush forests. They are frugivorous, which means they love to eat fruit. That is their primary source of nutrients. Kind of like me. I love just fruit fruit fruit fruit fruit all day. They are solitary creatures, which is really interesting. So they're kind of the only ape that is a bit more solitary. So the males will be solitary on their own. The females will be solitary, but if they have a baby, then they'll travel around with their baby and live with their baby for years.

JVN [00:11:20] And are orangutans more tree-ish or more ground-ish?

LAURA LEWIS [00:11:24] That's a great point. Yeah. They live almost exclusively in the trees, yeah. They can come down to the ground at times, the majority of their lives are in trees and so this makes them really difficult to study. There have been some amazing women who have pioneered the study of great apes in the wild, and orangutans are especially difficult to study in the wild because they're solitary. Right? So there's only one individual potentially walking around the forest that you have to go find. And they live way high up in the trees for the majority of their life. So sometimes even scientists will climb up into the trees to actually study them.

JVN [00:11:59] Do you think they could cut it in the Everglades? Like, would they, like...

LAURA LEWIS [00:12:02] So they have to have these really special environments. And that's one of the reasons that they are endangered, right? It's because these are very special environments in very specific places in the world that are really susceptible to climate change and to human interference. Right? So we are especially with orangutans, and this is really, really important. And something that I honestly need to get better at is their natural habitats, their forests, are being just completely obliterated for palm oil farms.

JVN [00:12:29] Palm oil.

LAURA LEWIS [00:12:30] Yes. Yes. This is huge.

JVN [00:12:32] And that's, like, in peanut butter.

LAURA LEWIS [00:12:34] Girl. It's in everything.

JVN [00:12:36] We should help the fucking orangutans. They're so cute. Because Borneo and Sumatra are, like, little ish islands. Like, they're not that big.

LAURA LEWIS [00:12:44] They're small habitats in which these animals live. And it's really important to preserve what little is left of them. And I completely agree with you. Not only is it about consumer choice, although consumer choice is important, but it's also about vocalizing and making these issues heard and more and more people understanding that, yes, palm oil is directly causing the endangerment of orangutans and we need to put pressure on our legislators to be able to make much more of a voice and concern about this to potentially stop

the importation of palm oil in order to kind of curb the use of palm oil in lots of American products in American life.

JVN [00:13:28] But now we're, like, approaching, like, your two faves, right? Which is, like, bonobos and chimpanzees, right?

LAURA LEWIS [00:13:34] Exactly, that's right.

JVN [00:13:35] Who's going first? Should we go alphabetically with bonobos?

LAURA LEWIS [00:13:38] Before we do that, I want to show you our great ape family tree. Can I do that? Because I think that's a really good place to start.

JVN [00:13:35] Please!

LAURA LEWIS [00:13:45] Can you see this?

JVN [00:13:48] Oh, my God. We literally all look alike. We literally all fucking look alike. We literally do.

LAURA LEWIS [00:13:52] Right? Right? Aren't we beautiful? Isn't this the most beautiful great ape family tree? Like, stunning, no?!

JVN [00:14:01] Like, so for our human, like, picture, like we're using human babies and don't take this the wrong way, parents. But, like, turns out babies, I think, look a little bit more, like, um... uh... uh... primate-like? I feel like human adults look less, like when you look at a baby's face next to any of the other faces, you're, like, "Oh, yeah, twins."

LAURA LEWIS [00:14:22] Yeah, twins! Exactly.

JVN [00:14:23] Who saw that coming.

LAURA LEWIS [00:14:24] And that was one of the reasons that I just became obsessed with these animals—is when I started working with them, I was 18 years old. I went to the zoo, I was in college at Duke, an undergrad at the time. There's mesh, metal mesh, in between us. But looking at these creatures, looking in their eyes, looking in their faces and feeling like I was looking at a cousin, I was looking at someone in my own family tree. It's unbelievable to look in their face, have them looking back at you and be like, "Wow, we are so similar."

JVN [00:14:55] So is this like the timeline of like the evolution of us or something?

LAURA LEWIS [00:14:59] Yes, exactly. Exactly. So I wanted to show this before I jumped into talking about chimpanzees and bonobos. I wanted to show our great family tree so you can get a better understanding of how we've evolved, of how our great ape family tree has evolved. So the first place to start is down here. This most bottom node, this blue node down here, this is the last common ancestor of all great apes. So at one point in time, about 15 million years ago, there was the start of the great family tree. It was one species. And then we split from there. So orangutans are the first great apes kind of to have evolved. And then about 8 to 10 million years ago is where we share a last common ancestor with gorillas. So we're more related to

gorillas than we are to orangutans. And then we have this gold node here. This is really, really important for my research but also, again, for understanding our closest living cousins on this planet. We share a last common ancestor with chimpanzees and bonobos that lived somewhere between 6 to 9 million years ago. So 6 to 9 million years ago we were all one species. And then after that time we split and humans started evolving on their own lineage here.

JVN [00:16:11] So, like, 8 to 10 million years ago, there was only orangutans and gorillas and, like, different types of them. And then, like, 6 to 9 million years ago, humans arrive onto the scene... from them?

LAURA LEWIS [00:16:27] Not *from* them. Yeah, so it's a completely separate species. And I think that's a really great point, Jonathan, to highlight is we are not coming from any of these living species today. We're coming from ancient species that lived millions of years ago that are no longer alive today.

JVN [00:16:43] Oh, is that, like, some Neanderthal thing?

LAURA LEWIS [00:16:46] Yes, exactly. Exactly! We did not come from chimpanzees or bonobos, orangutans or gorillas. We did not come from them. They are our cousins that are alive today. And I think that's really important. It's something that we kind of get wrong in pop culture. As we say, "We came from chimpanzees or chimpanzees came from us." That's completely not true. We came from a "last common ancestor," is what it's called. We came from the shared ancestor that lived 6 million years ago, is no longer alive today. And now we are this beautiful, great ape tree with these five living types of great apes that didn't come from each other but share a common ancestor.

JVN [00:17:22] So these are the five *living* great apes: orangutan, gorilla, human, chimpanzee, bonobo. But if you are thinking of it evolutionarily and, like, orangutans, like, came first of these five. Like, would it be fair to group like, like, Neanderthals, like, with humans, like and that, like—so we can really more from them, right?

LAURA LEWIS [00:17:40] Absolutely. So this is a really great question, and I'll see if I can kind of explain it to you maybe with another visual: if you get the idea of a river delta, right, there's kind of all these crossings, these mixings. So rather than it being a tree, actually a tree is not a very good example because you do get this, like, chunk, like, "we came from them, they came from us, they came from us, right. Instead, it's actually this beautiful river delta where there's lots of different species that are forming from each other, maybe meeting each other and producing offspring, maybe separating again. We have lots of different species that lived in the past that are no longer alive today that we didn't necessarily *come from* but came off of our lineage and didn't actually survive. Maybe I'll talk now, I think this is a good time to talk about our own human lineage—

JVN [00:18:29] Yes!

LAURA LEWIS [00:18:29] —because as I said, we actually don't know a whole lot about the fossil histories of the other species that lived on these gorilla, orangutan lineages.

JVN [00:18:38] Fuck!

LAURA LEWIS [00:18:39] We know some, I know, but some of it is just lost. A lot of genetics research actually will help to uncover the missing species that kind of lived on these lineages. But let's talk about humans because we actually do have a ton of human fossils that we've discovered. What we call them is "ancient humans." Our human genus is what it's called.

JVN [00:19:00] Okay, yeah. Okay, yes.

LAURA LEWIS [00:19:01] Our genus? Homo.

JVN [00:19:02] Yesss!

LAURA LEWIS [00:19:03] We love the genus homo. We love the genus homo, obviously. We are just one species in this beautiful genus where there's lots of other ancient human species. So we are *Homo sapiens*. Genus, Homo; sapiens is our species. But there's lots of other Homos that have lived on the planet before us, including *Homo neanderthalensis*, Neanderthals.

JVN [00:19:29] Is one, like, "erectus"? Like I feel like in that one graph, I think I saw one that said like *erectus*.

LAURA LEWIS [00:19:35] Yes, absolutely. There is *erectus*, *Homo erectus*, straight up. There are tons of other homo species that have walked the Earth. Can you see this here, this visual here? Okay, so what I'm showing you here is, this is not even complete. This is just some of the other ancient humans.

JVN [00:19:51] [GASPS] Wow. What we're looking at right now, you guys, is basically like a timeline and it's in terms of millions of years.

LAURA LEWIS [00:19:59] Exactly.

JVN [00:19:59] So there's, like, a zero like, you know, it's, like, now.

LAURA LEWIS [00:20:02] Exactly.

JVN [00:20:02] Then there's, like, 1 million years ago, 2 million years ago, 3 million years ago, like, furthest on the right.

LAURA LEWIS [00:20:07] And all of these came from Africa. We were all in Africa. And then slowly we started to migrate and move out of Africa and the, the big one that did this is *Homo erectus* down here. So *Homo erectus* was actually the one that was making lots of migrations out of Africa, and then obviously, eventually we spread all over the Earth, but we all originated, our entire human tree, originated in Africa. And then slowly we started to migrate out.

JVN [00:20:34] Okay, so the first homo in here is *Homo habilis*? *Habilis*? Like, 2 million years ago? No! It's *Homo rudolfensis*— *Homo rudolfensis*...

LAURA LEWIS [00:20:48] [LAUGHS] Yeah, I know these names are amazing. *Homo rudolfensis*.

JVN [00:20:52] Oh! *Rudolfensis*...

LAURA LEWIS [00:20:54] Yes. But you got the time exactly right. So our homo genus began around 2 million years ago.

JVN [00:21:00] How do they know that that's not just some teeth from *Australopithecus africanus* or something, like, how are they basing a whole thing off of just, like, some teeth?

LAURA LEWIS [00:21:09] The methods are getting better and better. And now we have these amazing tools today to actually be able to test. Oftentimes, we can test the DNA from those bones—

JVN [00:21:19] Ohhh!

LAURA LEWIS [00:21:20] —from those teeth. That's how we're able to understand, okay, you found some teeth in Africa, you know, somewhere in a dry riverbed, for example. You take it back to a lab, you do this really crazy process to extract DNA from the bones, and that's how we can tell that actually there are ancient humans, yeah, that lived 4 million years ago, that weren't even in our same genus. These are ancient humans that aren't even in our genus Homo. So we start with *Australopithecus*.

JVN [00:21:47] Yes!

LAURA LEWIS [00:21:48] So as we move from 4 million years to 2 million years, and this is a crazy thing, we still have—I don't know if you can see—there are still some *Australopithecus* that are living on the planet at the same time that our Homo genus is beginning. And this, again, is a fact that blew my mind is that there were multiple species of ancient humans living on the planet at one time.

JVN [00:22:14] Were *Homo habilis* and *Australopithecus* spicing, like, getting it on?

LAURA LEWIS [00:22:20] Great question. So that's, absolutely that's the next question is, did these individuals ever meet? And the answer is some did and some didn't. I want to highlight actually something even more important: we as humans, as *Homo sapiens*, lived on the planet at the same time as Neanderthals. And some other ancient humans called Denisovans as well. Not only did we live on the planet at the same time, but we actually lived in the same place and interacted with these individuals.

JVN [00:22:53] Were they fighting or were they, like, into it?

LAURA LEWIS [00:22:55] They were fighting.

JVN [00:22:55] Okay. Because did they look a little different?

LAURA LEWIS [00:22:59] So Neanderthals do look a little different from humans. They're bigger, for one thing. They have bigger bodies. They have way bigger heads. So they're kind of just stockier and bigger overall.

JVN [00:23:09] I just got my 23 and Me! And I got some Neanderthal in there.

LAURA LEWIS [00:23:12] Do you?

JVN [00:23:13] Yeah!

LAURA LEWIS [00:23:13] Okay! Exactly, exactly: so this DNA testing can actually show you and tell you that yes, these species interacted. Sometimes they were fighting and sometimes they were having sex and making babies.

JVN [00:23:25] Yes!

LAURA LEWIS [00:23:26] And the descendants of these individuals are part of the people who are alive today. Not everyone. Right. So people who have European descent, because these interactions were happening in Europe, actually still carry some of that Neanderthal DNA because our human ancestors were meeting and having sex with Neanderthals. [JVN AND LAURA SIGH] I know. And this is honestly, I've been thinking about this a lot. I think it's a really beautiful way to kind of understand humans and human diversity. Sometimes people get so obsessed with this one race idea or being completely white or completely, one race. And as a mixed person, I'm Black and Jewish, as a mixed person *and* as someone who studies evolution, I'm like, "Y'all, we aren't even a single species, you know? Some of us have Neanderthal DNA!

JVN [00:24:16] I do! So we come on the scene, like, 6 to 9 million years ago. Chimpanzees come and bonobos come, like, 1 to 2 million years ago?

LAURA LEWIS [00:24:29] That's right! So about 6 million years ago is when we shared a last common ancestor with chimpanzees and bonobos, when we were all one species. Then humans split off and did that beautiful crazy river delta thing where there are all these different ancient humans and chimpanzees and bonobos continue to evolve as a single species until only around 1 to 2 million years ago. 1 to 2 million years really isn't a whole lot of time in terms of evolution. And so it means because chimpanzees and bonobos split and became two separate species only about 1 to 2 million years ago, they have a lot of beautiful similarities, also some really interesting differences. So first you can just see here in terms of the similarities, they look pretty similar, right? So they have this beautiful black fur, these really expressive faces, big eyes, these big eyebrow regions. They have these really cute button-y noses, really expressive mouths. This is important. They use their mouths to communicate a lot.

JVN [00:25:32] It seems like the bonobos have more hair.

LAURA LEWIS [00:25:34] Yeah, bonobos often are a little bit fluffier, definitely, and they have darker hair. One way to really quickly tell bonobos and chimpanzees apart is that bonobos have this really black hair and chimpanzees, they can have dark hair, but it's often kind of brownish. And actually let me just talk about the speciation process—is what it's called—really quickly, because I think it's really cool and you might be into it. So 1 to 2 million years ago, there was a big drought. And parts of the Congo River, which is this huge river going through Congo. Parts of the Congo River dried up. Some of these species, the single species, crossed that dry riverbed and made it to a different region in what is now the Democratic Republic of Congo. And then after the drought, the drought stopped, the Congo River grew large again. These now two groups were split off from each other.

So this river completely geographically cut them off from each other. And now they're completely living in separate areas. They have no contact with each other. And what starts to happen is they start to evolve into these two separate species, chimpanzees and bonobos. And there's something really important about the difference in the species. Chimpanzees are living in this area that is first of all, most importantly, there are gorillas living in that area as well. But it's also just a little bit more scarce. So there's a little bit less food, which means they have to compete with gorillas and they have to compete with each other for food. So there's a lot of competition happening where chimpanzees are now living. Bonobos, on the other hand, are living in an area that's much more lush. There's just a lot more availability of fruit and other resources. And importantly, they're not living in an area with gorillas. There are no gorillas. So on the chimpanzee side of the river, you're getting a whole lot of competition; on the bonobos side of the river there's much less competition.

JVN [00:27:29] And who left who? Do we know? Like, was it like...

LAURA LEWIS [00:27:33] Yeah. So it was a single species that was not either chimpanzee or bonobo. It was kind of combined. There was the same species that was caught on either side of the river. [JVN CONFIRMS] But then across this past 1 million years, they evolved into separate species.

JVN [00:27:47] So who's the one that didn't cross the river? Now? I just want to know should, next time a fucking river dries up, do I go for greener pastures, or do I wait it out? Because I want to be a bonobo. So did they go looking for it? Or, like, did they just stay and wait? And then they're, like, "Y'all were stupid for leaving 'cause now you've got those fucking gorillas up there and you're hungry and you're beating each other out. Or up. But we're down here with all these good resources."

LAURA LEWIS [00:28:13] Yeah, that's actually a good question. I think the answer is that it's kind of where the bonobos landed, that it was this new, less competitive territory.

JVN [00:28:21] So the bonobos searched out something, they crossed the river. Then they still live in, like, Equatorial Africa and like what is now like the Democratic Republic of Congo.

LAURA LEWIS [00:28:30] Exactly. So bonobos only live in the Democratic Republic of Congo. Chimpanzees, on the other hand, they have this really big range across kind of the middle belt of Africa and goes from East Africa all the way to West Africa, from Tanzania to Senegal.

JVN [00:28:46] That makes sense, then, that the bonobos are the ones that branched out because they and these were more like just kind of all over everywhere a little bit and maybe like there's just like that one little place in the Congo and then that's where—. Okay. Obsessed.

LAURA LEWIS [00:28:57] Yes, exactly.

JVN [00:28:58] Cannot even handle how much I'm obsessed. So. Okay, So also though, in the place where the chimpanzees are where they have the competition with the gorillas, and then it reminds me of what you were saying at the beginning where, like, we think as humans we're the only ones who have, like, family, like family culture, like society, culture, war, which made me think of Game of Thrones, which we think of wherever, like, the gorillas and the chimpanzees are living at the same place. And also, like, wouldn't there be humans there now,

too? Like, so aren't there places, is it Game of Thrones as shit over there? Like, are people just, is it okay? What's happening? Are gorillas and, like, chimpanzees, like, fighting and stuff? Or no, they like each other.

LAURA LEWIS [00:29:36] I think they're mostly avoidant, they mostly avoid each other. Maybe we can talk about kind of chimpanzees and bonobos when *they* come into contact with other groups because this is again, this is exactly right. This is one defining feature of chimpanzees and bonobos that's very different between the two species. So chimpanzees are living in this very competitive environment, which means they really have to stake out territory for themselves. They have to be very territorial and protect their area, their territory, where they have trees to sleep and food to eat. Right. So it's really important for them to protect this area, to be very territorial. So chimpanzees are very territorial and they have these specific geographic ranges that do not overlap with their neighbors. So all the neighboring groups, they have these very specific geographic ranges that don't overlap. The males go on what are called border patrols. The males line up, one by one. They get very quiet and they stalk the border of their territories looking and listening for neighbors.

And then if they come into contact with neighbors, then there can be a little bit of warfare. Then they actually can have really violent interactions with their neighbors, that depending on group size, if there's a large group of chimpanzees that comes across a small group of 1 to 2 neighbors, for example, they can even kill their neighbors. So this is something that's really kind of unique to chimpanzees. And as you know, similar to us as humans, is we can be very territorial, too. Some of us are really into borders and protecting those borders. Right. It's something that we have deep in our evolutionary history because we have lived in these competitive environments, is to be on the lookout for neighbors and to make sure that you're protecting your territory from neighbors as well.

Now, on the other side of that, bonobos don't do that. And this is really interesting: you know, we know a whole lot about chimpanzees kind of in pop culture as well. We don't know as much about bonobos. I think that's for a specific reason. They are definitely more peaceful creatures, not all the time peaceful, but they are way more peaceful and they're way less territorial. Because they lived in this less competitive environments, they didn't really have to compete for food. It means they didn't really have to protect their territories as much. It means they don't have to have these specific geographic ranges, these specific territories. So bonobo group territories actually overlap. So they don't have these very specific borders. They have these kind of very flexible, porous borders where their geographic ranges are overlapping. And the most amazing thing is that if a bonobo group comes into contact with another bonobo group—sometimes they'll fight about 15% of the time they'll have aggressive interactions—but the rest of the time, they actually have what we call “pro-social interactions.” I like to think of them as big intergroup parties. So when bonobo neighbors meet up with a neighboring group, they will groom each other, play with each other, sleep with each other, sex each other all day long, feed with each other. And these intergroup interactions, these two groups interacting, these intergroup parties can last for weeks at a time. So they can be having these neighborly parties, these block parties, for weeks at a time, which is just amazing and beautiful and so different from what we see in chimpanzees.

JVN [00:33:06] So what's, like, the courtship, mating, situations for, like, bonobos and chimpanzees? But more bonobos because I want to know about the gay stuff because we love gay stuff.

LAURA LEWIS [00:33:16] Oh, absolutely. Absolutely, absolutely. And I do want to shout out Eliot Schrefer. I love that episode on queer sex in the animal kingdom. I keep telling everyone about it. I've listened to it multiple times, it's just beautiful. Gay stuff is definitely happening in chimpanzees, too, as we're just finding out. [JVN + LAURA SQUEAL]

JVN [00:33:32] Is there, like, intersex variations of like—because you know, how, like, Alicia Roth Weigel, and all of our, like, intersex friends that we love. I wonder if there's, like, intersex, like, other primates.

LAURA LEWIS [00:33:44] Honestly, Jonathan, I've been thinking about this a lot and I'm very curious, too, and I think the answer is we don't know. My guess would be way more likely than not that there are intersex individuals. We have not done enough research yet, but I'm almost positive that the answer would be yes or will be yes once we get to that place. Let's talk about the courtship process in chimpanzees and bonobos, right. Maybe, let me back up a little bit to just give you the landscape of what their social lives looks like. Right? So we talked about they're living in groups that have these kind of specific territories. Chimpanzees are in these very specific territories. Bonobos, their territories are overlapping, but they live in these large communities, is what we call them, of up to 200 individuals. These can be really, really large communities, right, very different from what we see in gorillas, for example, that only have about 5 to 10 typically.

In chimpanzees and bonobos, they're living in these big communities. So that's the first thing: they live in these really complex social worlds, and they have what we call fission-fusion social dynamics. This is that they live in these communities of up to 200 individuals, but the whole group, the whole community isn't together at the same time. Some individuals will split off and go forage on their own, go play on their own, go patrol the borders of their territory. And this is called the fission part of their social dynamics. So they'll break off, fission, into smaller groups throughout the day. And then other times of the day they'll come back together in larger groups. If there's a big fruiting tree, for example, a bunch of them will come together and have an exciting moment around this big fruiting tree. Often at night they'll come back together and they'll sleep together. They make nests and they'll actually all sleep together in the same trees, for protection at night. And this is the fusion part of their social dynamics where they come back together. So we have these really beautiful fission-fusion social dynamics where they may leave each other for days at a time, not see some individuals in a community for days at a time and then come back together other times at other days.

These large communities have multiple females living in the group and multiple males. They're really interacting with a lot of different individuals. And they're what we call promiscuous, which I love thinking about them in this term. What they're not doing is getting one partner, one mate, and mating with them for life. They're not doing that. They're hella promiscuous. So they're actually meeting with multiple individuals at a time often. Their biology, their actual—their sexual biology—is very similar to our own: the females have these month long, about month long cycles. Hormones will be cycling and at a certain period in the month they'll actually be receptive. They'll be in heat, and you can actually see that they're ovulating. They have this big, very big sign to tell everyone that they're ovulating. I'm sure you probably have pictures. They have these kind of big pink butts is what people call them.

JVN [00:36:43] Oh, yeah.

LAURA LEWIS [00:36:43] It's not actually their butt, it's their vagina that's swelling up. And announcing, "Hey! I'm ovulating! Anyone want to come get this?"

JVN [00:36:52] Yes!

LAURA LEWIS [00:36:52] So they have these very obvious signals that signal not just to males but also to other females as well, to everyone around. "Hey, I'm ovulating." When the females have these swellings, the males can get pretty aggressive, they can get really excited. They want to mate with this female. Sometimes they'll fight with each other, sometimes they'll actually beat the female up. We know this is a tactic—again, a little morbid—a tactic that they use is they use a little bit of violence to coerce the female to mate with them. But yes, they get really excited and the males will actually compete with each other to mate with these females.

And they do, there's a couple of things I think that are funny that they do sometimes. The males will what we call "mate guard." So they'll sit near the female who's ovulating. They'll sit near her all day long, but make sure no one else is coming around. They'll be kind of guarding her as, like, "This is mine. This is my mate. I don't want anyone else around. No one else can mate with her." So they do this, like, funny thing called mate guarding. And then—this is, I think, something that I love in these species—if the female is actually into someone else and sees a different male that she wants to meet with. Sometimes they can do a little sneaky link. Where they'll actually, yes, do a little sneaky meet up, and their behavior is amazing to watch when they do this. They get really quiet. They'll go off of each other. They're checking back to make sure no one is watching them leave. And they'll go have a sneaky link in the forest. They'll mate in the forest, maybe even for a couple of days at a time. They'll be completely gone from the rest of the group, having a little sneaky little meet-up, having some sex, and then they'll come back after a couple of days and join the group again.

JVN [00:38:29] Well, they weren't that sneaky if it was, like, a few days, I'm sure her, like, the other one was, like, "Where were you?"

LAURA LEWIS [00:38:35] I agree.

JVN [00:38:36] What about the infanticide? Like, does that happen? Well, like, is that a thing in chimpanzees? And bonobos, too? Or not so much bonobos because they're not as violent?

LAURA LEWIS [00:38:45] Exactly. So it doesn't happen at all in bonobos and it does happen in chimpanzees. Sometimes there will be infanticide. And again, this is males trying to make sure that their, honestly, their seed is passed on and other males are not. They're kind of having this male-male competition is what we call it. And again, once, once this infanticide does happen, then the female actually starts cycling again, starts her cycling process and will start off ovulating again almost immediately. So that tactic works well.

JVN [00:39:14] Do bonobos have any predators besides humans?

LAURA LEWIS [00:39:19] That's a great question. Humans are the number one predators of bonobos by far. Bonobos are really, really endan—*extremely*—endangered. So I think this is a good time to say. There are about 200,000 chimpanzees living on the planet. There are only 20,000 bonobos left living on the planet today.

JVN [00:39:35] Oh shit!

LAURA LEWIS [00:39:36] They're hella endangered and it's really sad. Not only is their forest being encroached upon, they are also being poached for meat for the meat trade.

JVN [00:39:45] Oh no! Not them either! Can we just not eat them? Their little...they're our cousins!

LAURA LEWIS [00:39:50] I know!

JVN [00:39:51] Don't eat your cousin!

LAURA LEWIS [00:39:52] I know! So part of it is for the meat trade and a big part of it is for the pet trade. The mothers are being killed. The babies are being stolen to be pets in people's homes, in private zoos. And it's horrible for these individuals because as we talked about, they live in these big, beautiful, boisterous communities. And then when they're taken as pets, yes, they are 100%. They are cute. I cannot, you know, I 100% agree they're cute, but then they're put into these homes where they're alone. Imagine being taken away from your family, away from your friends, your whole group that's your social world, and being placed alone in a cage or in a box. And that's, I think, the most important part for people to understand. These are very social creatures. They cannot live alone. They honestly become depressed when they're alone. They lose so much of themselves when they're alone as pets. And that's one of the biggest reasons why they shouldn't be pets. The other big reason is that they are super strong. A chimpanzee male is about five times stronger than a human male. So they're super, super strong. They can be really aggressive and violent. So they're not safe to have in your home.

JVN [00:40:59] Yeah! Remember that one chimpanzee ripped that lady's face off and she had to get, like, a face transplant?

LAURA LEWIS [00:41:04] Exactly. Yeah. So for those of us who work with apes, we have to be really, really, really careful when working with them. And sometimes *we* even, some of us get, get injured when working with them. We never go into the same enclosures as them, so they're always in their own enclosures. But yeah, they can be really aggressive, really violent. They're super strong. So maybe as babies they're cute and playful, but as soon as they start getting a little older, first of all, they're not living in their normal social communities, which is really sad. But they also get really strong and really violent, and they're really dangerous to have in your home. So they should never be used as pets.

JVN [00:41:38] Do, like, jaguars or, like, alligators or, like, crocodiles, like, eat chimpanzees or bonobos in the wild?

LAURA LEWIS [00:41:46] Yeah, absolutely. Yeah. So they are hunted. Often it's the babies that are hunted.

JVN [00:41:51] Nooooo!

LAURA LEWIS [00:41:52] I know. And it's the pyth-, it's pythons a lot of times that are hunting them. [SOUND OF JVN ANGUISH] I know, which is so sad.

JVN [00:41:59] I hate snakes. That was my first sentence, "I don't like 'nakes."

LAURA LEWIS [00:42:04] That was your first sentence?

JVN [00:42:05] My first sentence was "I don't like 'nakes." We talked about it on Getting Curious, I've talked to some herpetologists or whatever/however you say that, I just, I try, I do, I do get curious but then I'm, like, "Okay..." So okay, so bonobos very endangered. Are chimpanzees endangered too, but less so?

LAURA LEWIS [00:42:23] Chimpanzees are endangered, though, they are definitely endangered. A lot of their environment is being destroyed, a lot of their forests are being destroyed. They also are being used in the meat trade and the pet trade. There's a lot of now protections that are happening for them in lots of different countries, but they are very, very endangered as well. And so a big, huge important thing that I'll say is that we need to conserve these species better. There's some predictions that by 2050, even, bonobos will be completely gone and chimpanzees will be on their way to being extinct.

JVN [00:42:56] Jesus.

LAURA LEWIS [00:42:57] I know, it's really scary. This could happen in our lifetime. In our lifetime, we could lose our closest living cousins on the planet. Right? That's scary. That's horrible. We really need to make sure we're putting lots of effort, funding, into conservation efforts, conserving the forests in which they live. I think there's a lot of focus on punishment, but there needs to be a whole lot of focus on education, right. Educating the communities that live around them about these species, why they're so important, giving them resources, right, so they don't have to poach them for meat. That they can have other options. And there are programs that are doing lots of different tactics to give these communities other resources so that they don't have to be relying on resources from chimpanzees and bonobos that we can actually conserve these species.

JVN [00:43:42] So, like, a day in the life of, like, a chimp or bonobo group, like, the chimps are going to be more, like, Game of Thrones-y. The bonobos will be a little more, like, peaceful but basically, like, we're waking up in some trees...

LAURA LEWIS [00:43:54] So you're waking up. Let's say you're a chimpanzee, you're a bonobo in the forest. First of all, you're waking up in a nest. They sleep in these big, beautiful, leafy, bushy nests that they make. They will bend tree branches into these big, beautiful beds. It takes them a really long time to learn how to do this, also. Years, I'm talking years. So let's say you're a mama chimp waking up, your baby is sleeping with you because they don't know how to make their own nest yet. Babies sleep with their mamas for about five years until they can learn to make their own nest, which I think is really sweet. But okay, you're waking up in your nest. Well, let's say with your baby, you know, it's really comfy. There's a lot of individuals in your community that are around you that have been keeping you safe. You're all protected because they're all around each other. Right around dawn is when they wake up as they go to sleep with the sun and wake up with the sun and they'll be pretty high up in the tree, they sleep high up in the trees.

And then they're probably ready for breakfast, right? So they're going to go out. They're going to start foraging for food. So rather than going out like hunter gatherers, that's what we have done. And there's still people on the planet that are hunter gatherers today going out and hunting food and gathering food and bringing it back to a common place. Typically that's not what chimpanzees and bonobos are doing. They're just going out and foraging. So they're going out into the forest, they're foraging, and they eat tons of different things, right? So I said primarily, they're frugivorous. So they're eating lots of fruits, but they also eat lots of other things. They'll eat little caterpillars. They love honey. If they can find honey, they love honey. They'll eat termites, they'll use sticks to fish—

JVN [00:45:30] Oh, yes, I've seen that!

LAURA LEWIS [00:45:32] Yeah! You've seen it? Fish into termite mounds?

JVN [00:45:35] Not in real life! But in the movies or something, yes. Or Discovery or whatever.

LAURA LEWIS [00:45:39] So they use a lot of tools. Chimpanzees use a lot of tools in the wild.

JVN [00:45:42] Will chimpanzees eat pythons that try to eat their babies? Will they fucking wake up and fucking rip the goddamn snake in half and eat the shit out of it?

LAURA LEWIS [00:45:50] They will try. Yes, absolutely. Sometimes they will try. Usually it's a kind of flee response, so they'll actually flee, but sometimes they'll actually be aggressive to these snakes.

JVN [00:45:58] But they'll grab the baby first. They'll try to anyway?

LAURA LEWIS [00:46:02] It's this really instinctual response around snakes, and so that's what I was going to say when you had this "I hate 'nakes," like, that from a very young age, right. That is evolutionarily deep in you. That's a deep instinct. We have a deep instinct. A lot of primates have a deep instinct to hate snakes because they're dangerous right? They're in our environment. They're really scary. They can eat our babies. [JVN AFFIRMS] So they also have this instinct. They hate 'nakes! They really hate 'nakes. They'll flee. If they grab a baby, they will actually try to stomp it, bite it, rip it apart because they want to keep their babies and their communities safe.

JVN [00:46:38] So they're waking up, they're foraging, they're dealing with some predators, maybe. They're dealing with, like, you know, encroaching of environment stuff. But then they're eating and they might fight. While they're, like, patrolling...

LAURA LEWIS [00:46:49] Exactly. Exactly. And then a lot of the times they're playing, they're resting. There's so much we can learn from these species, our closest cousins, and I think bring into our own lives more. These guys rest a lot. They take naps. They take breaks. They are not just constantly on the move, constantly fighting, constantly eating. They're napping a lot, they're resting a lot. They're having times of play. They're grooming each other. So they have these really beautiful, peaceful times in the day as well. And I think that's something we can potentially incorporate more into our lives is, like, a little bit more rest, a little bit more relaxation, a little bit more breaks, grooming each other, being around each other, enjoying each other's company. So they're doing a lot of that, too.

They're napping, they're grooming each other. And this grooming activity, they'll go to their neighbor, their friend, and they'll actually start looking through their fur. Maybe picking off scabs or dirt. And this is really a lot of social bonding. So a lot of what's happening during the day as well is social bonding, forming social relationships and maintaining them, making sure that your friends that you have around you, they may be able to support you in coalitions. If you do get into aggressive interactions, for example, they may, if something happens to you, they could adopt your baby. They may actually adopt your orphan. Protect you potentially from pythons or other predators. There's so much that's important about maintaining these social relationships, just as we have in humans. Right. For us, it's really important to maintain our relationships with our family, with our friends. Chimpanzees and bonobos are doing the same thing throughout the day. These friendships used to be called the F-word in primatology because we didn't want to admit that they have friends, but they do. They have long lasting social relationships that look just like human friendships that last for years, sometimes decades.

JVN [00:48:42] So basically, Laura, we got to, like, 10:30 in the morning jungle time. We still have like a whole day in the life to finish up. And also, we really want to know, like, what it's like to be a gorgeous chimpanzee, to be a bonobo. What are they thinking? What is it like to work with them? There's just so much more that we have to get to. So I think we're, like, fully getting into a part two. So we got to a really good pause point. But, like, you're amazing. Your work is so amazing and thank you so much for coming on Getting Curious, and we're doing our part two, and we're so excited. We can't wait.

LAURA LEWIS [00:49:11] Yes, I can't wait. I'm so excited for part two. This was so fun to talk with you. And honestly, like, I think it's really important not just for you but for everyone, all of your listeners, to understand these gorgeous creatures, right? Our cousins. We really need to make sure that people are understanding them better so that we can protect them better. Right. And I can't wait to talk with you and think with you more about what are they actually thinking about? What's going on in those big brains? They have giant brains! I can't wait to talk. I can't wait for part two. This has been so much fun.

JVN [00:49:40] We love you so much, Laura. Thank you for coming on Getting Curious. You've been listening to Getting Curious with me, Jonathan Van Ness. Our guest this week was Laura Simone Lewis. You'll find links to her work and the episode description of whatever you're listening to this show on our theme music is Freak by Quiñ. Thank you so much to her for letting us use it. If you enjoyed our show, honey, introduce the friend and please show them how to subscribe. Follow us on Instagram and Twitter @CuriousWithJVN, we're keeping up with, like, all the news stories we're watching, past guests, things that we're looking at. You'll love a good time @CuriousWithJVN. Our editor is Andrew Carson. Getting Curious is produced by me, Erica Getto and Zahra Crim.