

Gorillaology with Dr. Tara Stoinski

Ologies Podcast

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Oh heeey, it's that extra stick of deodorant that you keep in the glove compartment, Alie Ward. I'm here for you, with a fresh new episode dedicated to apes just like us. So, perhaps you have heard the Primatology episode, it was released as episode 2, back when we were just [babbles] tiny little babies in 2017. But primates, it's a big-ass category. So, when I got an email from someone that started, "I'm probably one of only a few people in the world whose job involves feeling a 400-pound silverback's breath on the back of my neck," I was like, "Game on, woman. Let's do it."

So, I googled to see if I was making up the term "gorillaology," and sure enough, it does exist in the literature. There's a 2007 textbook, *Gorilla Society: Conflict, Compromise, and Cooperation Between the Sexes* and it involves the word "gorillaology" so, it's on. Now, the word "gorilla" itself comes from an account written by a Carthaginian explorer, circa 500 BCE, who described a group of beings that his African guides called Gorillae. And the translation says that the females outnumbered males and then goes into this brutal, horrible account of chasing and trying to capture, being counterattacked by the males, abducting females who tried to defend themselves and were eventually killed and skinned. So, right there, historical accounts of gorilla sightings involve a bunch of bad shit going down with colonists. PS, the word *gorilla* in Greek then went on to mean a group of hairy women... which sounds like my family reunion. What? Anyway, okay.

So, thanks for listening, thank you for subscribing, thank you for supporting on Patreon, for wearing OlogiesMerch.com items on your naked, hairy body. And for no dollars you can help out and leave a review, of which I read all, like this one that was left just a couple days ago by The F.A.N.G. who rated and wrote:

Swiping right on Ologies. I love this show so much that my dating profile response to the prompt, "I won't shut about ____" is "Alie Ward's Ologies podcast." Love from, The F.A.N.G. a Patreon supporter.

Also, ShaneLovesPodcasts, thank you for being a patron at Patreon.com/Ologies, you can submit questions for the guests; it costs a dollar a month. But yes, I read every review that you leave including the ones that you've been sending, with love, to me and my family right now as I spend some time with my ailing pop, your Grandpod. And you can listen to the secrets at the end of episodes, starting at around the Squid Encore in mid-April for more on that.

But yes, this week we have a fresh episode for you, it is being recorded right now in my sister's garage. So, this gorillaologist is a longtime primatologist and is the Chief Scientific Officer and the CEO of the Dian Fossey Gorilla Fund. She's dedicated her life to these animals, she's published over 100 papers on them, she loves talking about them, so we love her. She did her undergrad at Tufts, got her Master's in Zoology at the University of Oxford, and did the PhD at the Georgia Institute of Technology in Experimental Psychology, and she has worked extensively on the ground and in the field with them.

So, gather some branches and nest up for apey chitchat about hair, harems, chest pounding, poaching, pooping, mating, mycology, crested skulls, thick fur, fieldwork, primate emotions, banana flimflam, and the hidden secrets of gorilla wieners, with primatologist, conservationist, and gorillaologist, indeed, Dr. Tara Stoinski.

Tara: Tara Stoinski, she/her.

Alie: And Doctor, of course.

Tara: Yes, Dr. Tara Stoinski. *[laughs]*

Aw: Where are you based exactly?

Tara: Atlanta, Georgia.

Alie: Atlanta! Okay. Yeah, because you were at the Atlanta Zoo for a long time, right?

Tara: I was, yeah. I always tease; I'm like, in the same exact office I was in grad school. *[Alie laughs]* I went from a student to CEO and I'm still in the same office. I just don't have to share it now with three other people.

Alie: That's funny. You've been studying gorillas for decades, right? Decades and decades?

Tara: I have, I have. It's getting close to 30 deca- 30. *[chuckles]* It's getting close to three decades, 30 years, yeah.

Alie: Is it really? So, did you have a fascination with them as a kid? I mean this is such a question you must get at every single business meeting, every dinner party, but that's a lot of experience to have with gorillas.

Tara: I did not actually have a fascination with gorillas as a child. I had a fascination with animals, and for the longest time was planning to be a veterinarian, and then had the opportunity to go to Africa and study animal behavior, and really, that changed the trajectory of my career. I came back and decided to do a PhD instead of going to vet school and then had the opportunity to start working with gorillas during my PhD time. So, I think I started studying them in 1995.

Alie: '95! What was the animal that you were studying that got you hooked? Or what was that fieldwork like?

Tara: I was studying jackals, actually. *[high-pitched jackal cry]* I was living in Zimbabwe and we were studying jackals, their ecology. So, looking at how far they ranged, when they dispersed from their natal group, where did they go, what were their eating habits. And we never saw them; they were completely nocturnal; they wore radio collars so we just had equipment that would let us track the radio collar. It was freezing cold, I had no idea how chilly sub-Saharan Africa can be in their winter, at nighttime.

Aside: Okay, I'm a Chihuahua and I needed to know how cold it was. So, I found the paper that she worked on and the location, which was in Zimbabwe, and the overnight lows in the winter are around 45° Fahrenheit, which technically is warmer than the New Jersey where she grew up, and Atlanta where she is now based. But *you* wait outdoors in the winter for an invisible jackal to show up for months and you tell me how comfy that is.

Tara: So, I'm cold, it's pitch black, we never saw the animals, but I absolutely loved it and decided that I really wanted to come back and do that. And then was lucky enough to get to work with a species that are actually active during the day where you can see them.

Alie: *[laughs]* Was there a moment where there were advisors saying, "Stay with jackals" and you're like, "No. Fuck jackals"? *[both laugh]*

Aside: Absolutely no offense, jackals.

Alie: How were you able to make that leap? And was it something about primates or was it something about the region that gorillas are endemic to? What was it? Because in terms of charismatic fauna, gorillas are *it*.

Tara: They are, I would agree with you there, 100%. I was just very lucky to get into a PhD program where... In a lot of places, if you're in a program you might work with fish, or mice, or things that can live conveniently in a lab. We had the zoo in Atlanta as our lab. So, my PhD advisor was also the director of the zoo in Atlanta, so we got to come out and work with all the amazing species that lived at Zoo Atlanta, and they have a very large gorilla collection. And so, I just came in – I did have some previous experience with primates – and came in and started studying the gorillas there. I actually thought I might do my PhD on elephants; I was really fascinated, and I love elephants. I also looked at a PhD program with lions.

I ended up studying a small South American primate for my PhD, so I didn't even do my PhD on gorillas. I did it on an animal called the golden lion tamarin that is native to Brazil. But all the while was studying the gorillas here in the zoo, and then started working with them in the wild, and that's just become my career path.

Alie: In terms of what you do, how much of the study is in the wild versus captivity? And what are their populations like in the wild versus captivity right now?

Tara: So, for the past eight years I've been completely focused on wild gorillas. I spent about 13 years working in conjunction with Zoo Atlanta. I split my time between Zoo Atlanta and the Dian Fossey Gorilla Fund, so I did a little bit of both. But really, since I took over the CEO role, I've just been completely focused on protecting wild gorillas.

And your question is a really good one. A lot of people don't realize there are four types of gorillas in the wild, and actually only one of them are found in zoos. So, the other three are only found in Africa. Of the four types, there's two species and two subspecies. At the species level, they are all considered Critically Endangered, which is the highest level of endangerment, the next level up is Extinction in the wild.

We have western lowland gorillas; they actually have by far the healthiest population. We think there are probably about 300,000 of them left. So, that's a nice robust population. There's another type in Western Africa called Cross River gorillas and there are only about 300 of that subspecies left on the planet.

Alie: Wow.

Tara: And then if you skip over to central east Africa which is where the Fossey Fund works, there are, again, one species, two subspecies there. The mountain gorilla, which is the gorilla that most people know from Dian Fossey's time. There are about 1,000 of them remaining on the planet. And then probably one that most people haven't heard of called the Grauer's gorilla, they are found only in the eastern Democratic Republic of Congo, and we estimate there's about 6,500 of them left. So, very, very small populations for the most part across Africa.

Aside: Okay, that is a whole lot of gorilla. So, let's recap to get a visual picture here. So, all of these gorillas are from equatorial Africa, so the band of the continent right around the middle. The western gorilla is a species and genus and species is *Gorilla gorilla*. So, the one you may have seen in the zoo is the western lowland gorilla, which at around 400 pounds, they're the smaller of the four types of gorilla, and usually they're more brownish, they might have red fur on their face. And the number of western lowland gorillas left is about the population of Lincoln, Nebraska.

Now, north of their range is a little pocket, and in that lives another subspecies, the Cross River type, and there are fewer of those than would fill a large college lecture hall, like 300. Which would be a party of *Gorilla gorillas*, gotta say.

Now, the other species, we move east on the continent. Still equatorial Africa to the *Gorilla beringei* species, which are a little larger and they have darker black fur. And we have another two subspecies of these eastern gorillas. There is the eastern lowland gorilla, that's also called the Grauer's gorilla; there's about a Radio City Music Hall's worth of eastern lowland Grauer's gorillas remaining.

And then, up in the volcano cloud forest on the borders of Uganda and the Democratic Republic of the Congo and Rwanda, are about 1,000 thick-furred, stockier mountain gorillas that were the subjects of studies by the legendary primatologist and conservationist and *Gorillas in the Mist* author, Dian Fossey. And her work with them spanned from the late '60s until her death in 1985, which was a homicide, it was suspected, by those who opposed her opposition to poaching.

Alie: And is habitat loss responsible for the population decline? Or is it human activity? Is it poaching? What would be good populations or past populations for gorillas?

Tara: Yeah, it really depends on which gorilla subspecies you're looking at when we talk about the threats that are there. For mountain gorillas, they are not actively poached. They were in Dian Fossey's time, 50 years ago, but they are not anymore, which is wonderful. [*"That's good."*] There is poaching that happens, snares that are set for other animals, and gorillas can get caught in them, so indirectly hunting is a threat but luckily, they're not directly being hunted.

The biggest threat for mountain gorillas is just their small population size and also very, very small habitat. There's only about 800 square kilometers total left for the subspecies. So, you've got them literally living in these islands of forest that are surrounded by heavy human population density. And so those populations still rely on the forest for food, for water, for firewood. And so, because the population is so small and the habitat is so small, we don't want any further degradation or impact on that habitat.

When you look to the other three types of gorillas, unfortunately, there it really is poaching that is primarily responsible for their decline. So, poaching for food, people eat them. There is habitat destruction, certainly that's happening. But luckily there is still, unlike for mountain gorillas, there is still a lot of beautiful rainforest left in the Congo Basin. But it is direct poaching and disease. Gorillas can be highly affected by Ebola, just like people. And so, in some parts of western Africa, populations have experienced 95% decline because Ebola has come into the population and killed a lot of the gorillas.

Alie: And what is it like to go and study them? What does that fieldwork look like? Are you doing population counts? Are you doing behavioral observations?

Tara: Again, it kind of varies depending on where you are. So, in Rwanda where we work, Dian Fossey started that work 55 years ago now, in 1967. Those animals became habituated to human presence, which basically means that they just became accustomed to having people around them. So there, we get very close to the animals, we're within 30 feet of them, and we collect data on everything. You name it, we want to study it. So, we do a lot of behavioral work and that dates back to Dian Fossey's time. We do demographic work which is basically understanding the structure of the population; so births, deaths, what gorillas live in what group, and how they move around. We study their ranging habits; we study what they eat.

We do a lot of physiology work, so we collect a lot of biological samples [*Such as...*] like gorilla poop... We can spend hours talking about poop. [*Alie chuckles*] That gives us insights into their hormones, their genetics, their health, their parasite loads. So, you name it, we study it.

Aside: If you're like, "I could listen to a whole episode on studying the feces of animals," I'm just going to gently direct you toward the Scatology episode with the number one fan of number two, Dr. Rachel Santymire. We'll link that in the show notes. But some gorillas are totally used to having other apes around them gawking, carrying clipboards and cameras. But with the fieldwork in the eastern Congo Basin Forest, the strategy with these critically endangered, eastern lowland, AKA Grauer's gorilla, is different. It's a little more low key.

Tara: Where we work in Congo, the gorillas there have not been habituated to people, and that's for their own safety; because they are hunted, we don't want them to lose their fear of people. So there, we follow them one day behind. So, we can still get a lot of data; we can see food remains to get an idea of what they're eating, we can still look at their ranging patterns, so how much space do they need? The biggest thing we're missing is those detailed behavioral observations on what they're doing on a day-to-day basis because we're not close enough to see them.

Alie: What are they doing on a day-to-day basis? What is a gorilla's life like and how chill is it? How many naps? What are they eating? [*Tara laughs*] Are they fighting?

Tara: They love to nap. So, a typical day for a gorilla family, and I'll talk about mountain gorillas, is they wake up, each family member makes their own nest every night. So, they make nests on the ground. They don't reuse them, so every night they have to build their own nest. And it probably has a lot to do with thermoregulation; it's really cold, they live up at 10 or 11,000 feet. It's wet, it's cold, so they build this nest, they go to bed, when the sun goes down, they wake up when the sun comes up. They'll get up, they'll move a little bit, they'll forage for a while. And then they will rest. Middle of the morning, they like to take a rest, the adults will sleep, the kids will play. They'll get up, they'll forage again, they might walk half a kilometer through the course of the day. Just this intermittent eating and feeding. And then it's the end of the day and they make their nests again.

This schedule can vary, for example if they run into another gorilla family. So, the interactions they have with these other families vary, depending on whether they knew that family or not. So, if it's a family that they are unfamiliar with, then a lot of times those interactions can be quite aggressive. It's an opportunity for males to attract females to join them and for females to make decisions about their reproductive future, if they want to leave the group they are in and join a new male. [*"We could run away together."*]

If it's a family that they maybe had lived with before, sometimes families will split, then it can be quite peaceful. The adults will hang out near each other, and the kids will play. So, it really depends. They have incredibly long memories like we do, they form lifelong relationships like we do, and that really impacts how they move through space and how they interact with other gorillas that live in the habitat.

Alie: How big are these families?

Tara: Great question. It really can vary. So, an average gorilla family is usually 10 individuals. But we have had groups of up to 65 animals, which is phenomenal. The other really funny thing about mountain gorillas... Again, they're all very unique, the different subspecies. But mountain gorillas are particularly special. Of the four types of gorillas, they live in the most

extreme environment, these really high elevation forests, where there's not a lot of fruit. They basically kind of live in the equivalent of a salad bowl. And the reason that that's important is that the kind of food that you eat, and its availability, affects the kind of group that you live in.

And so, because mountain gorillas aren't dependent on fruit, which is very seasonally available, and you might have one fruiting tree and you might have to travel a kilometer to the next fruiting tree, that really constrains how big your group can be. So, when we look at the other types of gorillas that rely a lot on fruit, their groups really average around 10 individuals. Mountain gorillas, because they live in a salad bowl and food is kind of everywhere, it gives them a lot more flexibility.

So, number one, their groups can be a lot bigger. As I said, we've had one that was 65. Number two, and this is what becomes really interesting for us as scientists, is their group structure can be quite a bit different, in that multiple males can live in the same group with females. For the other three subspecies, you really have a group structure that's one male, the silverback – that's the adult male, he leads the group – a couple of females, and their kids. In mountain gorillas, we've had groups that have had up to 8 to 10 adult males living in the group, which just introduces all sorts of interesting behavioral elements around female choice and male competition.

Alie: I understand that that affects the size of their junk also. Correct? If there's more competition, don't you tend to have, perhaps... let's just say a larger nut sack? But I understand that if you don't have as much competition, you have smaller. Ergo, having giant balls is not a compliment as much as we think it is.

Tara: Well, when you look at gorillas and when you look at their junk, you see that they shouldn't be living in these large multi-male groups. They are not equipped. They have very small testicles, very small penis, compared to a chimpanzee, which evolved in this multi-male structure where there's all this competition in the group for access. With gorillas, once you get your females, normally you shouldn't have any competition in the group, so they don't have large testicles, they don't engage in sperm competition. So, we laugh at the mountain gorillas, we're like, "You guys are not chimps, but you are kind of living in chimp-like groups. So, how is this all working?"

Alie: Well also, what's the math on that? Because one silverback to, let's say, a handful of females, where are all the other silverbacks and where are they getting all these ladies?

Tara: Great question. So, a lot of males actually never form family groups. So, in the sort of traditional gorilla structure, by the age of 15, they can leave earlier, but by the age of 15 a male has reached maturity and he needs to strike out on his own. And he is not allowed to join another family. So, he goes out on his own and he tries to interact with families and tries to recruit females to join him, and that's how you form a family. A lot of males are just never successful. They never actually form a group, and so they may live their entire lives as bachelors. [*"I'm a loner, a rebel!"*]

Mountain gorilla males do have this other option though, they can choose to strike out on their own and form a family, or because their groups can have multiple males, they can also make the decision to kind of queue up and wait and see if they can inherit dominance, should the dominant male die, or maybe as he gets older, he's not quite as fit so they can sort of take over dominance. That's one of the things that I'm super fascinated with, is what influences whether a male chooses to stay or go?

Alie: What about the dominant male, they're typically for that species and subspecies called silverbacks. Why do they have silver backs? And how do they end up in that position?

Tara: So, a silverback is... People often say to me, "Do you study the silverback species?" And you know, silverback is simply the term for an adult male, so all four types of gorillas have silverbacks. It's a process of maturation, it starts roughly around the age of 12, and again, depending on the subspecies, is done by 15 or 18. And just as in humans, as males mature, they get broad chest, facial hair, their voice deepens. For gorillas, they get this mantle of silver hair on their back. No one's ever asked the question of why, but I imagine it's just a signal. It's so clearly visible in the forest when you see these black creatures walking through the forest, that silverback really stands out. And given that he's the leader, it makes him easy to follow, et cetera.

But yeah, it's just a simple process of maturation that they get these big, big, big heads, which is where their jaw muscles attach. They're completely vegetarian, they eat the same thing as females, so the jaw muscles are not for processing food, it's really for fighting and defending their family and attracting females to join them.

Aside: So, when you see a male silverback with what looks like just a fantastic beehive of an updo, that's actually that boney crest plus a thick temporalis muscle giving all that volume. Now, if you have ever considered chewing plastic to look like a Chad, [*And that's when we came up with the jaws-ercise.*] that's actually your masseter muscle at the crook of your jawline, and maybe a more square one *will* make someone love you. The great news is, you can also just inject fillers there.

Or maybe you're a lady and society tells you yours is too angular, you can have botulism toxins injected there so that your masseter muscle is less square. And all these things are kind of normal to us, I guess, and for that reason, it's astounding that there are not aliens following us around with clipboards, getting PhDs about this. Well, I guess there are, they're just other apes, they're just us. [*whispers*] Wow.

Alie: I have so many questions. You mentioned the voice deepening and that makes me wonder, how are we seeing them communicate? Is it through vocalizations, is it through chest beating, is it through body language... eye contact?

Tara: All of the above, all of the above. So, I would say, they don't use their faces as much for communication like we do. And I think it's one of the reasons that people often see gorillas, say in a zoo, and say they look bored. But they have the same exact facial expression in the wild, it's very serious. And part of it is, think about it, they live in a jungle where there's not really great visibility. So, they're not looking at each other's faces and using faces to communicate in the same way that we are.

But they use a lot of vocalizations, and it's just a way to kind of keep in touch. They do this vocalization called the belch vocalization which is like [*deep throat clearing*] and they'll do that... you'll hear one will do it, and then another one that's 50 feet away will do it, and it'll sort of go around the room and it's like saying, "I'm here, I'm present, I'm over here." It's also the vocalization that we do as we approach them to kind of let them know we're coming, we don't mean any harm, because you just don't want to surprise them as you're approaching them.

And then they use things like chest beats [*small groan followed by several rapid beats*] which is primarily used by adult males but it's a really important communication signal. And we just recently found in some collaborative works we've done with a long-term partner called

the Max Planck Institute for Evolutionary Anthropology, that those chest beats are an honest communication signal. So, bigger is better for male gorillas, the bigger you are, the more likely you are to become dominant, the more likely you are to attract females. And the bigger you are, the lower your chest beat, the lower the noise of your chest beat. So, males can use this to sort of size up rival males, by hearing this chest beat, which can travel as much as a kilometer. And females can also use it to size up a potential mate. Does this male sound like he's big? Yeah, I might want him as my new mate.

Alie: You know, I'm listening to this and I'm thinking of all of the women on Tinder who are like, "6 foot and over," and you're like, *[high pitched]* "You guys!"

Aside: For more on this, you can see the 2014 study, "Does Height Matter? An Examination of Height Preferences in Romantic Coupling." It's about people. And the researchers report that women gravitate toward tall guys for a bunch of reasons but that, "most of the explanations were connected to societal expectations or gender stereotypes." And the study goes on to explain that this is because height is seen as a signifier of childhood health, which is a marker of class and also, potentially, the ability to fend off attackers of your shared babies. But nowadays, there aren't a lot of loose raccoons trying to eat our babies alive.

So, is a tall partner better at talking through, maybe threats like classroom bullies? Probably not as much as a short guy. In fact, if you're out dating, don't sleep on short guys, maybe sleep with them. So, under 5'7" dudes are 32% less likely to divorce, and they do a greater share of housework than average and tall guys. And once in a relationship, researchers found, they tend to compensate for their shortness by earning a higher relative share of income.

Is this going to get so many short kings laid? No. You know why? Because they're already boinking more. According to a study in the *Journal of Sexual Health* titled "Sexual activity of young men is not related to their anthropometric parameters," men under 5'9" already have a higher coital frequency than their taller peers. And I bet right now there's a bunch of tall guys being like, "Why are you shitting on us right now?" And I'm just saying, this is how a lot of shorter guys feel all the time on apps, so suck it up, bros.

And if you are swiping for a mate, maybe get that height requirement out of your bio, because if you like TikToks of people finding treasures while thrifting, you're going to love the cool shorter guys, who are constantly overlooked, who rule. There's this one guy named Dave who is quoted in a 2015 *Yahoo Lifestyle* article about height and dating and he said, "When you're horizontal, there's only a couple of places the inches count." And Dave, boy howdy, that's actually wrong according to a few studies. You can see the Phallogy and Urology episodes for more on that. Apparently, those inches don't really matter either.

Also, we're going to discuss gorilla junk in a bit. But wow, yes, males are judged by height from LA, to New York, to the mountains of Central Africa. And if you're like, "Ward, why are you doing a two-minute aside about online dating and divorce rates in a gorilla episode?" Because number one, it's my show, fuck off. And number two, they share 98% of our DNA. And you and I both know, you do not click on an ape episode to not learn about how you, an ape, work.

Alie: I mean, is it so difficult not to extrapolate gorilla lifestyle and behavior and think about your own? Because right now I'm like, "I should be vegan and nap more." *[Tara laughs]* Do you ever watch this and, like, modify your life?

Tara: Totally. I mean, I think it goes both ways. To start on the gorilla side, I remember when I was pregnant and I'm like, "Oh my gosh, am I going to be a good mom? How is this going to work?" And they always tell you when you go to the hospital, you should nest, make yourself feel really comfortable. So, I took all these pictures of gorilla moms and their babies to the hospital with me. Because I'm like, "If I can be half as good a mom as a gorilla mom..." They're so patient, they nurse their kids for three years, they let them sleep with them every night, they never get frustrated with them, the kids will throw temper tantrums and cry when they're getting weaned and the moms are just like, "Okay, it's okay." [*I love you, Mom.*] So, I'm like, "If I can be half as good a mom as a gorilla mom, then I will be all set." And certainly, watching them and seeing the way that they interact with their young, it's very inspiring. We think about that a lot, I think, as primatologists when we have our own kids.

But I also think what's really fun sometimes is to think about human behavior and, sort of, if you sit back and objectively watch humans the way that we objectively watch animals, it is really interesting to see all of these subtle power plays that go on that we just... You know, we're used to it because it's our society, but when you really sort of sit back and if you were to sit there with a clipboard and take notes, it's really funny to see. My one daughter, every time she gets a new piece of food, she smells it before she eats it, and that's totally what primates do. [*Alie laughs*] So, every time I watch her do that it just makes me laugh because I'm like, "Oh my gosh, you're a little gorilla. You smell your food before you eat it."

Alie: And what about that nexus between humans and gorillas? Where gorillas are in captivity, maybe modifying their behavior to be more humanlike, or using sign language, or learning zookeeper cues, what are the ethics of that? What are the ethics of Koko learning sign language and things like that?

Tara: Yeah. So, I feel like, in zoos, I think the real effort that zoos have made is to let gorillas live in social structures that replicate what they would be in the wild. And that's, by far, the most enriching for them, so that they can have these complex social relationships that they would have in the wild. But they also do a lot of work with them that aids them in keeping them in captivity.

So, a lot of positive reinforcement training, and it's amazing the things that gorillas can do. They've been trained to present their bellies for ultrasounds when they're pregnant so they can see the health of the baby; they've been trained to present their ear to have a thermometer put in so they can see if they have a fever; trained to present their hand if they have a wound so it can be cleaned. And all of this really enables improved care in a captive setting and it's really amazing.

The gorillas really enjoy it too, it's interactive for them. I think just the same way our pets enjoy being trained, I think the gorillas like the human interaction, they like that they get treats, obviously. They're food-motivated, just like us. But it is really amazing to see these relationships that keepers have with the gorillas. But at the end of the day, the most important relationship is the one that gorillas have with the other gorillas, with their family.

In the wild it's very different. So, when Dian Fossey first went there, she did develop relationships with the animals, and I think that's part of what makes her story amazing, and it really resonates with people. If you see early images of her or you watch *Gorillas in the Mist*, the movie that was made about her life, you'll see that she was very interactive with the gorillas. [*music swells. "But she would risk it all..." Someone shouts, No! "...to save the gorillas in the mist."*] That is not something that we do anymore for several reasons. First

and foremost, as scientists, we really want to know what gorilla society is all about, and if we're putting ourselves in the middle of that, then we're influencing that. So, we really want, as much as possible, to be a fly on the wall. And that's the biggest compliment, if you walk into a gorilla family and they completely ignore you, because then you really are just another tree that's in their environment.

But the other really important reason is that they are susceptible to human respiratory viruses. So, things that can make us just a little ill can make them quite sick or even be lethal. So, wanting to keep that distance from them, that physical distance, so that if you're carrying something and you're not aware of it, that you're minimizing any risk of transmitting that to them.

Alie: And I have so many questions from listeners, can I rapid fire you?

Tara: Sure, of course!

Aside: But before we do, we're going to toss some coin at a charity. Big, huge surprise, this one is pretty obvious, it's headed to the Dian Fossey Gorilla Fund, which is dedicated to the conservation, protection, and study of gorillas and their habitats in Africa. Their successful integrated approach includes close collaboration with local governments and communities as well as partners from around the world. They have more than 50 years of successful conservation work in saving gorillas and it's based on a model of protecting gorillas, conducting science, training conservationists, and helping communities. So, thank you to sponsors of *Ologies* who make that donation possible.

[Ad Break]

Okay, let's go real hard on this lightning round. Y'all asked some sick questions, including about illnesses. And I'm looking at you, first-time question-askers Larissa Parsons Vafiades and Elyse Chezick, who asked about gorilla ailments.

Alie: A lot of people actually asked, first-time question-asker, The Awkward Cactus, and Mike Monikowski, and Kyla Cheung asked: Can gorillas get COVID-19? Other listeners asked about natural illnesses that they get. But yeah, are you having to mirror what we're studying in humans on gorilla populations in the wild and in captivity?

Tara: Yeah, that's a great question. We have known from the start of the pandemic that gorillas and most Old World primates, primates that live in Africa and Asia, have a genetically identical receptor system to COVID-19 that we do, which means that they can get it. So, we immediately, in the field, put in place measures to minimize any risk of taking COVID-19 to them.

So, normally our trackers go in and out of the forest every day. So, when COVID started, we put them in remote camps where they are isolated from their friends and family and community for a month at a time. So, they get tested before they go in, they're in isolation, they work for a month on, and then they come off the rotation. They've been doing that now, for two plus years.

And they're used to it now but when we remember the beginning of COVID and how scary that was... All I wanted to do was hunker down with my family and be there with them. And these amazing trackers put the health and safety of the gorillas at the forefront, to be out there and make sure that there was minimal, minimal risk that we could be carrying COVID and bring it to them. And with 1,000 of them left on the planet, that's always a concern of ours. We're always thinking about "How do we minimize any risk to the gorillas?"

To our knowledge, no wild gorillas have gotten COVID. There has been COVID that has happened in several zoo populations. And obviously, zoos take that same level of protection; they wear masks, people are tested, vaccinated. But because there is that closer proximity, there is more of an opportunity for transferring. Three or four zoos have had gorillas that have gotten COVID. The great news is, no gorillas have died of COVID, and it seems to really mimic what we see in humans, really mild symptoms in most healthy individuals. In fact, I think a population that got Omicron, they didn't show any symptoms, the only reason they knew they had it was because they were testing their fecal samples to see if they were shedding virus and one day the fecal samples showed up positive, but they couldn't tell from the gorillas themselves.

Early on, with some of the earlier variants, I think some of the older gorillas that, just like in people, had some pre-existing health conditions, they suffered a little bit more and they showed more symptoms. But luckily, knock on wood, they've handled it in a similar way to the human population.

Aside: For more on this, you can see the recent Environmental Microbiology episode about testing wastewater for COVID with Dr. Amy Kirby from the CDC. Because listen, you're not using your number two anymore, let the science people have it and run some numbers. Finders' keepers.

Now, what about pre-poo, AKA, their diet? Let's dig into some gorilla cuisine.

Alie: We had a bunch of questions about diet. I know we've covered a little bit, but Jacob Bowman, Chandler Witherington, Julia McDonald, Jesse Hurlburt, Carly Poczik wanted to know: What are gorillas' favorite thing to eat? And Adam McInnes wanted to know: Is it true that because of their diets, gorillas are just like... CONSTANTLY farting? And then also Kalila Elahi wanted to know if they need to drink water. They say that their dad told them that gorillas didn't need to drink water because they ate so much parsley. And this person says that they believed it until they were way too old. Also, do they even eat parsley? They want to know. Lot of questions. What do they love to eat? Do they fart all the time? Do they have to drink water?

Tara: Phenomenal questions. [*Alie laughs*] They are, they're great questions. And again, it does vary depending on which gorilla subspecies you're talking about, but I will just focus on mountain gorillas for the moment. They love, basically, we call it herbaceous vegetations. Vines, they eat tons of vines. So, galium is a hugely preferred food, which we actually have here in the States – I don't know if it's the same species or not, but when you walk through a field it sticks to your leg. They love, love galium. It sort of grows everywhere, they'll pull it down and make a ball and munch on it. They love wild celery which has incredibly high water content, which we'll get to our water question in a moment.

They love bamboo, but particularly, they love bamboo shoots. So, there's two times a year when it's bamboo shooting season. It's right now actually, it's when there's high rainfall. And one of the really interesting things about bamboo is, we've been able, through studying their urine, to know kind of their energy balance. And like most wild animals, gorillas kind of are always teetering... Unlike us, we're always in the positive, at least most Western cultures, we're always in a positive energy balance because we have way easy access to food and we don't exercise as much as we probably should.

Aside: I just want to pop in and say, even in Western cultures, of course, a lot of people go hungry. Food insecurity and related problems... I just looked this up because I wasn't

depressed enough and found out that 25,000 people on Earth a day die from food insecurity and hunger. So, if you have any extra calories in the form of food to donate, you can look up your local food pantry and see what they need; maybe drop off a bag of things like apple sauce, canned beans, instant potatoes, granola bars, canned meats, other staples I looked up they always tend to need. Also, let's donate to the LA Regional Food Bank for this episode too. Shall we? Okay.

But in general, our species tends to have access to more calories than we need to survive. But for gorillas, Dr. Stoinski says...

Tara: For most wild animals, you know, you're constantly teetering, just enough. What we found, in gorillas, that's the case. They're kind of getting just enough calories for all they're burning off during the day, but when they eat bamboo shoots, that's when they get... it's kind of like the equivalent of a gorilla candy bar. So, they're often described as being drunk when they eat bamboo shoots, but really what it is, is they just got, I think, kind of like a sugar high. They just have a ton of extra energy. So they're playful and they run around. I mean, they're always playful, but even more so during bamboo shooting season.

So, they eat bamboo, they eat gallium, they eat celery, they love nettles. These incredibly... I mean, these nettles are insane, these huge leaves with stinging... It's almost like asbestos, like if you're ever touched asbestos... not asbestos, like...

Alie: Insulation?

Tara: Insulation and you get all those little fine hairs.

Alie: Fiberglass.

Tara: Yeah, fiberglass, exactly. They have basically the equivalent of fiberglass on the back of them. So, how the gorillas eat these, I don't know. If you brush up against them, your hand will hurt for half an hour. But they carefully fold them to protect their mouths and then they eat them. So, it's just incredible.

Alie: How many calories a day does a grown-ass gorilla need? How many pounds are they?

Tara: The males will eat about 60 pounds of vegetation a day. Think about that, 60 pounds of salad a day. When I get my salad at the store and it weighs half a pound, I feel like I'm eating an enormous salad, and they eat 60 pounds a day, which is why they nap a lot. And to get to the second point, they do fart a lot. *[Alie laughs]* There are a lot of farting noises that you hear, and I still giggle most of the time. It's kind of like when your dog farts and they just act like nothing has happened *[Alie laughs]* and it makes me feel really immature but I'm like, "Oh my gosh, did you just hear that?" *[long, deep fart. "With a gorilla, you may well hear them before you see them." Short fart followed by very long, drawn-out fart. "Nice, I heard a gorilla fart."]*

Aside: Just a side note, thank you to YouTubers NaturalWorldSafaris and Fiji27 for those publicly available audio resources, very much enjoyed that. I just wanted to toot your horns there.

Tara: So yes, lots of farting as they process all of that vegetation. And then to the last question, they really don't drink water a lot. They don't get it from parsley, but they get it from things like wild celery, which is pretty close. We are seeing... we just published a paper earlier this year showing that their water drinking is increasing, and we don't know if that's perhaps tied to climate change. These guys live in an area that is experiencing climate change and there are days that are getting warmer. Are they going to become more dependent on

water? We don't know. But for the most part, they really don't need to drink because they get a lot of moisture from what they eat.

Alie: Wow. Chelsea Rabl, Margaryta Korchova, and Alia Myers all asked about their teeth. Margaryta said: Question... If gorillas don't eat meat, why do they have huge canines? And then Chelsea wants to know: They don't brush their teeth and sometimes their teeth look yellow, but they must not rot out. So, how do they maintain good dental health? Is it just all the chewing?

Tara: Yes. I think all that mastication, that chewing really helps. They chew fibrous stuff, so it probably gets some of the dirt and debris on. You'll see a lot of the mountain gorillas, when they open their mouth, their teeth are actually black, and the inside of their mouth is black and that is because of all the tannins in some of the plants that they eat. It actually stains their mouth, just like when we drink a lot of tea, our teeth get stained. Their mouths actually get stained. [*"Would you like a spot of tea?"*]

But those huge teeth, they're much bigger in males than females, and again, it's all for attracting mates and defending your family. So, the males use all that size and strength to look sexy, and then once they have a family, to make sure that they can protect them from other males.

Alie: Wow, so that's just like having a shiv kind of, having a knife. [*Tara laughs*] They're packin'. Rory Jenkins, Kristen Rosenblum, and Courtney Jones all had reproduction questions. Courtney wanted to know how long a gorilla is pregnant. And Rory wants to know: Do gorillas experience something like menstruation? Do they get their periods?

Tara: They surely do. They have monthly cycles just like we do, they're pregnant for eight and a half months. I mean, gorillas share 98% of our DNA and their reproductive system is very similar to ours. In fact, in zoos, you know, if a female is not breeding, if they don't want her to breed for whatever reason, they take human birth control pills. Human birth control pills can work in them the same way they work in us.

So yeah, pregnant for eight and a half months. They generally give birth every four years, so they will nurse for about three years and when they're nursing, they don't cycle. So, they don't get their period when they're nursing, they don't cycle. And then they'll start cycling again, and usually within three or four cycles, they'll get pregnant. So, they only have about three or four cycles every four years just because of their reproductive system. So, they don't have it nearly as frequently as we do, but yeah, that's a bit about their reproduction.

Aside: Yup, more primate mating is in the Biological Anthropology episode with Dr. Lara Durgavich and the Primatology episode in which chimp scientist Kate Gilmore divulged that primates in zoos, such as gorillas take regular old human birth control. Bananas. Oh also, gorillas don't really eat bananas because the ones that we get at the store are highly cultivated and are not native to their central African habitat. But they do like bananas apparently. They'll eat a banana, but they're not evolved, bananas are not a part of their diet. That is not a banana in their pocket. Oh, speaking of which...

Alie: Jesse Moses wants to know: What's the deal with dick bones? Why do they have them? Do they have bacula??

Tara: I don't think so.

Aside: Okay, sorry again, me again. This is a great fun fact because they kind of do and they kind of don't. I had to look this up. They actually have a penis bone but it's around six

millimeters long. So, it's there, but no one really knows how much heavy lifting it's doing on a gorilla's formidable, two-and-a-half inch long, dong. They have tiny penises. And FYI, I fact-checked this via the textbook, *Primate Sexuality: Comparative Studies of the Prosimians, Monkeys, Apes, and Humans*, which was written by a scientist named... Dr. Dixson. It is available in *hardcover*, only.

Alie: Several people had a great question, Scalebar, Hannah Reilly, Timothy Anderson-Williams, Lauren McGregor all wanted to know about their smell. Timothy asked: Why do they smell kind of like onions and why is the smell so strong? And Lauren McGregor wants to know: Is it weird that I like their musty smell? Haha, they say. Do they smell like onions or is that only if they've been eating onions?

Tara: I would not describe it as smelling like onions. I think they smell amazing. I love it. It is very musty, it's a little bit kind of like a human body odor smell and it's really primarily the males. It also is when they're excited or when they're fighting. If males come together, a lot of times you can smell them well before you see them. I think it's just an odor they put out when they get excited. It probably also contains information that we're not aware of, that they use as a communication tool. But it's primarily the males and I agree, I think it smells great. But I wouldn't describe it as an onion, but my smell might be off. [*laughs*]

Aside: One reporter, Sarah Ivens of the *Louisville Courier-Journal* described gorilla musk thusly, "It does indeed smell like a teenage boys' bedroom. Think stale sweat, mingling with rancid sneakers." [*squirms*] And according to the 2014 study, "Wild Western Lowland Gorillas Signal Selectively Using Odor," apparently silverbacks in particular can turn the scents on and off, depending on how conspicuous they want to be. And if you're wondering, this data was "measured through a human pungency scale." I don't know what that means but they do get smellier when they're mad or stressed. And anyone who has ever smeared deodorant on all kinds of body areas before a job interview, you get it.

Speaking of nerves, patrons Seán Thomas Kane, Kristin Dawn Urban, Ruby Johnstone, and Rory Jenkins wondered about the feelings of these complex, beautiful primates. How do scientists perform a vibe check?

Alie: A lot of folks had questions about emotions and Christa Avampato wanted to know if they have the same emotions humans have. Joy, grief, anger. Chris Moore wants to know: Do gorillas cry? Christina Johnson says: Yes! And... do they laugh? Jorie West wants to know about gorilla grieving: Do they grieve for lost loved ones and how? What is their mental health like?

Tara: People often ask me, like, why is it important to conserve gorillas? We have so many challenges out there, why is saving this one species important? And I like to give three reasons, the first one is because they need us. As we've already talked about, they're Critically Endangered, they're among the most at-risk of the million species that are at risk of extinction right now. So, they need our help.

Number two, we need them. Gorillas live in these beautiful rainforests in central Africa, they're the second-largest standing tropical rainforests left on the planet, and they're one of our best natural defenses against climate change. And the gorillas are the gardeners of these forests. So, by protecting gorillas we're ultimately helping our own species.

And the third reason, to get to the listeners' questions is that the gorillas, they share 98% of our DNA and they share our humanity. When you look at them, we see so many behaviors that we think of as being human, reflected in the gorillas. They form lifelong relationships.

One of the things I love about them the most is they take care of their most vulnerable, they grieve the loss of family members, and you see all of this when you watch them.

So definitely, when a family member dies... it really depends on who the family member is and how central they were. And a lot of times, if gorillas are not well, they will actually kind of choose to separate themselves from the group. But for example, when Titus died, he was a silverback and an elder statesman in his group, and when he died, the group refused to leave him. They stayed with him for multiple days; youngsters in the group laid with him. Sometimes they'll groom individuals and sometimes they'll even kind of kick and hit them and I think it's to get a reaction like, "Why aren't you moving? We need to go. We need to eat."

We just had a male die in the groups that we help protect, he died about three weeks ago. He died overnight in his nest. He had been sick, and he died in his nest. We saw his family come back to that area a few days later, this video is actually on our website, and the kids in his group, these are his offspring, were all picking up pieces of vegetation from the nest and smelling it. I'm sure his scent was still there, and they spent lots of time around his nest, smelling his nest, investigating where he had last been before he died.

Aside: Was I choking back tears during this? I sure was.

Tara: So, they definitely grieve. They do laugh. They have a wonderful laugh that they do when they play, and it's great when you're in the forest and you just hear this chuckling. You can't see them, but you can hear this chuckling and you know that two gorillas are having a great time playing. They don't cry, but they do this pitiful vocalization that sounds a lot like crying. So, kids will do it when they're getting weaned or if they're unhappy about something, and adults will do it if a family member is lost. We call it hooting but it's sort of like [*quick, short hoots*]. And it sounds very sad, particularly when little kids do it. It is the equivalent of crying, but no tears; we don't see tears come out of their eyes in the way that we do in people.

Alie: That made me think too of Jane Goodall. Do you guys get to kick it ever? Do you get to hang out?

Tara: [*laughs*] Jane is super busy. You know, she is on the road 330 days a year, advocating for the environment and for chimpanzees. But I have had the distinct privilege of meeting Jane on multiple occasions, and I work with a lot of students that did their PhDs at Gombe, or a lot of my colleagues. I've been involved in a long-term collaboration where we're actually combining data on the chimps that Jane and others have studied with the gorillas that we study and several other primate species to see, what can we tell about primates in general when we pool our data and look beyond the individual species level and look at primates more broadly. So yeah, it's been a huge honor and I actually have pictures of Jane and Dian together in my office. It's an amazing legacy that those early female primatologists left for those of us that are working in the field today.

Alie: You know, on the topic of conservation, Megan Stanton, Laura M. Smith, Kelli Brockington, Scotty Dee, Amanda Gripe, and Celeste all wanted to know more about conservation. Megan Stanton says: Poaching seems to be done generally by people who may not have other means of supporting their families. Are there incentives or opportunities being made available to nearby communities who may be relying on poaching for income? And Laura Smith asked: How do gorilla conservation organizations work with local communities? Other listeners just wanted to know, what can we do to help gorillas in general? If you're on

the other side of the world, should you recycle your electronics because silicone is harvested? Things like that.

Tara: Yeah, those are excellent questions and ones that I really love answering, so I really appreciate them. I mean our motto at the Fossey Fund is “Helping people saving gorillas” because we know that for gorillas to thrive, the people that live near them must thrive. And yes, a lot of these populations that live near gorillas suffer from poverty, particularly in Congo. Congo has the second-highest rate of extreme poverty in the world with more than 75% of their people living on less than \$1.90 a day, and they don’t have other options. So, we really very strongly believe that people are part of conservation, and we always say that we take a people-centered approach to conservation.

And what we really focus on at our organization are the root causes of why people are reliant on those forest ecosystems. So, it’s oftentimes food security, it’s water security, they go into the forest to get water, it’s livelihood, going into the forest to have something to make money. So, those are really the areas that we focus on.

We just did a phenomenal mushroom growing project in Rwanda. Mushrooms are super high in protein; they’re a really good thing for people to eat. So, we supported local communities to actually come in; we built huts for them. Mushrooms have this really interesting growing cycle, which you never think as a primatologist that you’re going to end up learning about mushrooms. [*Alie laughs*] But we helped build these huts, they grow in these very specific conditions, bought the tubers for the community. We taught them how to grow the mushrooms, we helped them with the harvest, we taught them how to cook the mushrooms because you have to make sure that people want to incorporate this into their diet.

So, they were able to feed themselves, they distributed mushrooms to some of the most vulnerable in their community that couldn’t afford to buy it, and then they actually sold mushrooms and made a profit. So, it’s these types of programs... it touches on all of the things that we’re interested in; it touches on livelihood, it touches on food security, and it also touches on education. Those are the areas where we work with local communities.

And then also just providing jobs. Where we work in eastern Congo, there are no other job opportunities. And there, we’re working with gorillas that actually don’t live in national parks. So, all of the mountain gorillas are lucky, they live in a national park in one of the three countries where they are found. So, they are afforded a level of protection just by being in that national park.

For Grauer’s gorillas in Congo, the vast majority of them actually live outside of national park, so they’re living on people’s land. So, we are now protecting an area that’s about 2,400 square kilometers, three times the size of New York City, that previously had no protection. We’ve entered into a management agreement with the communities, so they agree that this will have conservation as a priority; they won’t hunt gorillas, they won’t hunt chimpanzees or other endangered species. We will help them manage that forest and in exchange for that, they get employment, they get hired as trackers, they’re hired as biodiversity scientists, et cetera. And then we’ll also make these investments in their community around livelihoods, infrastructure like building health clinics or schools, and food security.

So, definitely for conservation to work, people have to be part of it. And I think the point is, a lot of times, people want to vilify poachers, these people are bad. What’s happening with gorillas – and it’s not like the organized poaching we see for rhino horn or for elephant

tusks – these are really people that are trying to survive and trying to keep their families alive. How we can help make them part of conservation is a big part of our mission.

For people that want to help, I think it's a great question... Definitely recycling your electronics. A lot of people don't know that some of the minerals that are critical for small electronics like computers and cell phones, come out of eastern Congo. So, recycling everything is a good thing but particularly if we can lessen the need to bring these out of the forest. Just being educated about these issues. I always say I eat, sleep, and breathe gorillas, and it always surprises me that most people don't know these guys are endangered, that we're at risk of losing them. So, being educated, being an advocate, voting, using your voice to vote, to vote for politicians that believe climate change is real, that want to have environmental priorities, that is a huge thing.

And then supporting organizations that are doing great work on the ground. We always want to encourage people, if they like the Fossey Fund, to support us. You can donate, you can adopt a gorilla. These are real gorillas that we're protecting in the wild so when you adopt them – symbolically, obviously, we're not going to deliver a gorilla to your doorstep – [Alie laughs] all that money goes to help keep... We have more than 300 staff in Africa that are out every single day, protecting gorillas, working with communities, training that next generation of leaders in Africa and beyond. So, all of those funds help support those activities.

Alie: And last questions I always ask... Something must suck about working with gorillas. Clearly, the fact that they're endangered and you're up against a lot of challenges, must be one of them. Anything petty about gorillas that you'd like to talk shit on? Anything about the job in general that is more difficult than you would think it is?

Tara: I take a lot of equipment to Africa, like 500 pounds of equipment at a time, and as I get older, that part gets worse. But no, I think the hardest thing for me is, you know, I came to this job as a scientist and that's the part that I really get jazzed about and I love doing science. But a lot of my day-to-day now is getting the resources to enable other people to do that work. Which I love to do, and I love to see the next generation coming up underneath, but there are moments...

During the pandemic at one point when I was working at home all the time, my one daughter was like, "Mom, your job really stinks. All you do is email and Zoom calls." And I had never really thought about it that way because for me it's all about the bigger picture but I'm like, "You know what? Yeah. I used to get to sit and watch animals all the time and now I do a lot of other stuff."

But I love it. I mean, I feel so lucky to have had this amazing career and worked with the incredible people in my organization but all the partner organizations, the governments that we work with... It's so inspiring and it gives you a reason to get out of bed in the morning when some mornings you may not really want to get out of bed, so I really have no complaints.

Alie: What about your favorite thing about being a Gorillaologist, which by the way, looked it up, it's a word. It's a real word. [Tara laughs] I forgot to address that but it's a word.

Tara: It is... I mean, A, I get to study the coolest species on the planet and constantly learning new things. Just to be in their presence is an honor. It's also really fun cocktail party talk when people are like, "What do you do?" I'm like, "Well, I study gorillas." Usually they're like, "Well I didn't expect to hear that answer." My husband was an attorney so definitely... People

either thought my job was really cool... When we would go to attorney parties, it was either really cool or they were like, "Okay, this lady is strange and I'm just going to walk away." But it is fun; it's a non-traditional job so it is fun to get to talk about it. Every once in a while though I want to be incognito and I won't say what I do because it inevitably leads to lots of questions. And most times I totally love talking about gorillas and every once in a while I'm like, I need a little bit of a break today so... "I'm an architect."

Alie: Yup. Yeah. "I work at Target." Although, I would have a lot of questions for somebody who worked at Target probably too. Thank you so much for spending some of your day on a Zoom call and doing emails to do this interview. I really appreciate it. [laughs]

Tara: Well, I love it. It gave me a whole hour to talk about gorillas, awesome questions from your listeners, thank you guys so much for that. And please check us out. I mean, we are with the gorillas every day, so we post multiple times a day about... I always say it's the gorilla soap operas, the lives of these guys, the work that we do with communities. We're on Facebook, Twitter, Instagram. I think we're getting on TikTok and so we would love to have people just come and learn more about these amazing creatures and the important work that's happening to make sure that they have a future as well as us.

So, ask apes excellent questions. You're an ape, isn't that fucking weird? I'm just an animal making noises with my mouth, that you understand to mean abstract concepts. And we're allowed to drive cars, it's so fucked. Anyway, find links to the [Dian Fossey Gorilla Fund](#) in the show notes, you can tell them hello, they've been doing excellent work for 50 years. You'll also find links to the Primatology and Biological Anthropology episodes if you're into that, as well as Phallogogy and Urology.

Ologies merch is available at [OlogiesMerch.com](#). Thank you, Susan Hale, for handling that and so, so much else for *Ologies*. Thank you, Noel Dilworth for all the scheduling. Thank you, Erin Talbert, Boni Dutch, and Shannon Feltus for adminning the *Ologies* Podcast [Facebook group](#). Emily White of The Wordary heads up our professional transcripts and Caleb Patton bleeps them, and those are up for free at [AlieWard.com/Ologies/Extras](#) or at the link in the show notes. Kelly R. Dwyer helps maintain the website, she can make you one, she's great, link in the show notes. Zeke Rodrigues Thomas and Mercedes Maitland of Mindjam Media head up the *Smologies* episodes which are de-filthed and shortened for all ages; we release those every few weeks. Steven Ray Morris helps out as well.

And to my main ape, and lead editor, Jarrett Sleeper of Mindjam Media, thank you so much for making these episodes at my sister's dining room table, in between helping out my dad so much. He's a good one. Nick Thorburn made the *Ologies* music.

If you stick around until the end of the episode, I tell you a secret. And this week, a little BTS right after we stopped recording, Tara happened to mention that she's a huge fan of Duran Duran, she has a Duran Duran poster in her office. And I was like, do you think the members of the band should be their own genus and species like *Duran duran?* ... like *Gorilla gorilla*. And she was like, "Nice." And I was like, "Thanks."

If you've been tuning in also to see how we're doing with your Grandpod, we're hanging in there. He's a really robust dude, he tends to bust through a lot of his oncologist's prognoses so, man oh man... we're just soaking up every moment with him. We're eating a lot of tiny miniature Drumstick ice creams, we're looking at photos, we're crying, we're telling him how much we appreciate him.

And remember the Thanatology about death and dying from 2017? The lady that I met in the Hampton Inn conference room in Cincinnati, her name is Cole Imperi... Turned out to be one of my

dearest friends. I don't know how I would be getting through this without her right now. She's... augh, so good. So yeah, we'll link that up in the show notes too, Thanatology. It's a real life-changer. Okay. Go wonder at the world, appreciate each other out there. Berbye.

Transcribed by Aveline Malek at TheWordary.com

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