

You're Wrong About, "Koko The Gorilla"

[OPENING CLIP, SOUNDBITE OF SARAH]

Sarah: Isn't it terrible that the name "Donald" is like "Adolf" now? Like, you hear it and you're just like, *shivers in fear*

[THEME SONG]

Michael: Are you ready, do you wanna get going?

Sarah: Yeah! Whew. Welcome to *You're Wrong About*, the show where...ooo, no

Michael: *laughs* Although, "Ooo, No" is actually a pretty good tagline. It's actually pretty apt for a lot of our episodes.

Sarah: Yeah, let's just go with that: "Welcome to *You're Wrong About*, the show where Ooo, No"

Michael: *laughs*

Sarah: Yup, I stand by it.

Michael: I'm Michael Hobbs, I'm a reporter for the Huffington Post.

Sarah: I'm Sarah Marshall, I'm working on a book about the Satanic Panic.

Michael: And if you want to support the show we're on <https://www.patreon.com/yourewrongabout>. And, speaking of which, we have a little announcement to make.

Sarah: We are undertaking the radical step of offering Patreon rewards for the first time ever.

Michael: We're gonna give people stuff.

Sarah: Finally when you sign up, the answer is something other than, "You get nothing." We've very excited. We've had Patreon for 15 months and we're finally organized enough to offer something to the people who are so kindly helping us make this show.

Michael: So one of the things we have learned from meeting you folks on social media is that we get a lot of questions. People want to know how we research the show and if things were cut out of the episodes and they want to ask follow-up questions like, “What do you think of this new piece of information or —”

Sarah: What do you think of the episode of “The Red Shoe Diaries” with Paula Barbieri in it, that’s something that people ask me every single day. Just kidding, not even once, but someday someone will.

[LAUGHTER]

Michael: And we thought it would be fun to, like, once a month go through all those questions and talk about the background and maybe do a little extra research.

Sarah: Yeah this is a place for us to convene in a fun afterparty bonus episode and talk about such exciting topics as Tonya Harding’s episodes of “America’s Worst Cooks” or whatever weird tangential stuff comes up and that you want to ask us about. And, yeah, we’re just excited to try some stuff out.

Michael: So if you don’t want to support us that’s still super chill, but if you’d like to hear us chat about random stuff and ask us random questions, please do.

Sarah: If you’re not one of those iTunes reviewers who things like, “The girl-host says like too much.

Michael: Those were about me. For the record, those were about me because my likes have gotten out of control.

Sarah: It’s both of us, the problem is both of us.

Michael: So if you would like to ask us something about that, please don’t.

Sarah: Yeah.

Michael: So yes, stay tuned for more news on that. If you’re a Patreon subscriber you’ll get a message. We don’t know how this is going to work yet but we’ll figure it out

Sarah: It will work some way or another.

Michael: Yes.

Sarah: We'll all have fun.

Michael: And...today, we are talking about Koko the Gorilla!

Sarah: I am so excited. I do not think we have ever announced an episode topic that has inspired more anxiety in our listeners.

Michael: I know!

Sarah: I feel like some hearts are going to be breaking across the world tonight and I don't even know why.

Michael: *laughing* People had this reaction like we're gonna cancel Koko?! Like, "Fuck this gorilla! She didn't do shit!" Just to spoil it, that's not going to be the point of this episode.

[LAUGHTER]

Sarah: Koko is guilty of white collar crime! And elite deviance!

[LAUGHTER]

Michael: Koko can stay. You can keep Koko. We're not going to ruin Koko for you.

Sarah: Great, let's just get that out on the table first.

Michael: Yes, we might ruin a couple of the *humans* around Koko, but we're not going to necessarily ruin Koko. Koko can stay.

Sarah: Well, this show is all about ruining humans--

Michael: Yes.

Sarah: --so, I think that's fine. Yeah, all right, tell me the story, Mike.

Michael: I mean, this is a fun episode because, like, we've been doing so many of these True Crime-y episodes and like, deep historical episodes. This one is maybe the first one that is really about what makes us human.

Sarah: Huh...

Michael: I mean, this is the first one that talks about biology and cognition and nature.

Sarah: *vocalizes interest*

Michael: It's just a fun little detour!

Sarah: You're taking us on a little, like, "Mike Rail Road"

Michael: *laughs*

Sarah: *imitates train* Choo, Choo!

Michael: And so, yeah, do you want to tell me? What do you know about Koko the Gorilla? What do you remember?

Sarah: Oh my goodness....Okay, so when I was a child, there was a book, which I believe many of our listeners will remember. I bet you're going to be able to say it with me--

Both *Koko's Kitten!!*

Sarah: Yes! Did you have *Koko's Kitten* as a child? Did you read that?

Michael: I weirdly didn't.

Sarah: Okay, *Koko's Kitten* was a book about Koko...I don't know if it was pre or post kitten, but she became famous for her ability to communicate in American Sign Language -- or at least that's what we were told.

Michael: It was both, actually! She was kinda famous, and then *Koko's Kitten* came out and then she was mega famous.

Sarah: *chuckles* It's like being a pop star and you release a couple singles before you hit it really big.

Michael: Yes!

Sarah: And it's like, "Communicating With Humans"? Number 17 on the charts! "With KITTEN"?! Number 1!

[LAUGHTER]

Sarah: Okay, I forget where she lived, it was somewhere in California, and she has this, like, main researcher working with her named Penny Patterson--

Michael: Penny Patterson!

Sarah: --and she had beautiful blonde hair. And I as a child, and I would imagine many other children, felt very intrigued by the idea that women didn't seem to be very represented in science. But there were these famous women of Primatology.

Michael: Yeah, that's true!

Sarah: There was Penny Patterson, and there was Dian Fossey working with the gorillas, and, of course, there was Jane Goodall, who I also loved when I was a kid.

Michael: Yeah! Women in STEM, leaning in. There's also a lot of very interesting, sort of, literary analysis type literature of the emotions it invokes in us when we see this giant gorilla who, even though Koko is a female, we sort of think of gorillas as male, like, we think of King Kong. Then we have Penny Patterson, who's this extremely petite, white, blonde--

Sarah: Fay Wray lady.

Michael: Yes! There's just a lot of like cultural stuff--

Sarah: Huh!

Michael: --wrapped up in those photos, and I do think that is one of the reasons why this story went so far and so wide because there is this kind of like, *Beauty and the Beast* type imagery.

Sarah: Yeah! So, it's interesting that there's, like, certain jobs that people like the optics of a woman doing *laughs* and Primatology is one of them!

Michael: Right!

Sarah: Yeah, so what I remember about *Koko's Kitten* is that Koko expressed via sign language that she wanted a kitten -- or that maybe she wanted a baby? I can't remember.

Michael: She wanted a baby really bad but they got her a kitten. They kept trying to get her stuffed animals but she knew they were stuffed animals. She knew that wasn't a substitute so they got her a real kitten.

Sarah: Yeah, and she was like, “No, no, I want a *real* cat or a kitten. She had seen one on tv or something like that, right?”

Michael: Yeah! Yeah. Do you remember the name of the kitten?

Sarah: All Ball!

Michael: Yes!

Sarah: But All Ball was a Manx -- the theory was that Koko picked All Ball because, like her, All Ball had no tail.

Michael: Mmm! And she liked rhymes! That’s why she chose “All Ball” for the name.

Sarah: Right. Yes! So the story of *Koko’s Kitten* was that Koko wanted a kitten and got a kitten named All Ball. I think, you know, as a child, to me some of the appeal of it was, like, here was this gigantic sad gorilla mom *vocalizes sympathy* who just wanted a baby! And in a way, got to have one. Also, it was kind of bittersweet because she was all alone, far away from the other gorillas.

Michael: Mmhmm.

Sarah: Koko’s just a complicated figure and I think as a child some of the first complicated characters that you experience are animals.

Michael: Do you remember what happened at the end of the book? Did your parents not tell you?

Sarah: I don’t know if it was in the book, but I know that All Ball got hit by a car.

Michael: Yeah, and Koko mourned. One of the really famous pieces of footage that went around this story was when Koko finds out All Ball was hit by a car. She signs BAD SAD BAD, hunches over and you can see the sadness hitting her, then she signs FROWN CRY FROWN. So, it was this revelation, I think, that animals have much more complicated emotional lives and potentially inner lives

Sarah: That’s so funny to me because that’s not complicated! She’s just like, “I’m sad, this is sad” and it’s like, oh my God, yes! If we didn’t trust a gorilla to experience that emotion then what do we think of animals as humans? Jeez.

Michael: Right. Well, this is actually, I mean, one of the main through lines in this, is the gradual realization by humans that animals are much more complex than we thought they were--

Sarah: And that they have emotions? And they know things?

Michael: Yeah! Well this is a good intro to the episode. I wanted to start with a shower thought.

Sarah: Mmm!

Michael: I forget where I read this...but basically, throughout the course of human history, humans have always defined Humanity in opposition to something else. So, before the Industrial Revolution, what made us human was our ability to make complicated things, right? We can sew a shirt, we can make a sword, right? It was always kind of us in *opposition* to the animals. Then, after the Industrial Revolution, we were like, "Well, machines can make all these things," right? Well, then, what makes us human is this higher order stuff -- like, we can play chess.

Sarah: Hmm...

Michael: And then, 100 years after that, the computer comes along and computers can play chess!

Sarah: *vocalizing agreeance*

Michael: Then we had to redefine Humanity, sort of almost going back to this more animal concept where humans have feelings, humans have creativity. So, we keep redefining Humanity according to what Humanity isn't. So, the history of talking animals goes back a really long time. We've talked about Clever Hans on this show--

Sarah: Oh, I'm so excited to talk about this!

Michael: One of the famous cases was a talking dolphin? I think this was in the 1950s? There was a guy named John Lilly--

Sarah: Oh, I remember! Oh, this is Peter, Peter the Talking Dolphin.

Michael: Yeah.

Sarah: And he taught himself to make the "P" sound by like, putting his blowhole in the water and he could make a "pah" through suction and he figured out how to make the "P" sound.

Michael: Right. The great tell of where this comes from, and the ideology that's driving it, is there's a weird link between this kind of research and Eugenics--

Sarah: *surprised* huh!!

Michael: --which we will come across a number of times in the show

Sarah: ...ew

Michael: So this guy, John Lilly, who "taught dolphins how to speak," once said, "Like the Black races of Africa, porpoises are on the brink of becoming Westernized."

Sarah: N-- *shocked, stuttering* Ahem! Oh my....God?!

Michael: RIGHT?! I mean, you can't talk about this line between humans and animals without talking about the assumed gradations within humans.

Sarah: Mmm...and we have a history of like, measuring skulls and having books about phrenology and, you know, "the face of the lying Jew." Of course that's all come back so *sarcastically* that's great.

Michael: So, I don't think that everybody that was doing these studies was an out-and-out Eugenicist, but all of these studies are kind of done on this rubric of: Where do we place animals on this "Creatures Worthy of Moral Attention versus Creatures Not Worthy of Moral Attention" spectrum.

Sarah: Good Lord! It's also really interesting that the metric is assumed to be like, "How intelligent is this being? Therefore, how decently are we forced to treat it because of that?"

Michael: Exactly! So, I interviewed an ape researcher who actually worked with Koko for two years, a guy named Marcus Perlman--

Sarah: Oh, wow!

Michael: --and he splits this type of research into three generations. The first generation was in the 1930s -- these early studies of, "Can a chimp be taught to speak like humans?" So, there were these researchers in the 1930s and 1940s who basically adopted a chimp and said, "We're going to raise it as our son."

Sarah: Oh, yeah...I've heard of this, too.

Michael: Do you remember this? This is a chimp named Gua.

Sarah: And they had a human baby! And they raised them alongside each other?

Michael: Yes! Yeah, they tried raising them together. Basically, that didn't work because their son, Donald, started taking up all these habits from the chimp, so they canceled the project. There's another experiment in 1947, another couple adopts a chimp named Vicky and they spend seven years doing all of this vocal training and teaching it to talk. Essentially, after all of this time, she could say four words: 1) mama 2) papa 3) cup 4) up

Sarah: I think it's fascinating that people spent years of their lives like, "This chimp must vocalize! There is literally no other way for a being to communicate!"

Michael: Right! So, this one was also basically a failure. I mean, this is so obvious to us now, but it was not obvious at the time, that humans and chimps have completely different vocal cords. Like, the anatomy is totally different. This is an excerpt from a biology article:

"The human vocal apparatus consists of the larynx, the throat, the nasal cavity, the tongue, and the lips -- all of which are shaped differently in non-human apes."

Another big thing, apparently -- I did not know this -- is that apes can't control their breath the way that humans can.

Sarah: Hm! So that's why they don't write operas!

Michael: *chuckles* Right! And also why they sort of just kind of do, "uh, uh uh" *mimicking gorilla* I did not know this! This is actually really cool, that as humans, without realizing that you're doing it, you're calculating how long your next sentence is going to be and then deciding how much air to take in.

Sarah: Wow! We're so talented.

Michael: We can also control our breath in that--You know that thing where you're like, halfway done with a sentence and you're like, "Oh, shit! I have more to say!"? You can kind of slow your breath down and *exasperatedly choking words out* say the rest of it...

Sarah: *laughs*

Michael: Animals literally physically cannot do that.

Sarah: That's tough for them! That's why they don't go on talk shows, too.

Michael: *laughs* It's why they're so bad at karaoke, yes!

[LAUGHTER]

Michael: And so, basically, everyone is like, "Well, we can't teach the chimps to speak because it's literally physically impossible for them to speak. So, if only there was some way that creatures could speak without using their mouth and lips...."

Sarah: Something that was invented like a hundred years ago....

[LAUGHTER]

Michael: So, now, we have to talk a little bit about the context and the history of sign language. What do you know about this? You've mentioned this on the show before.

Sarah: I know an unusual amount about it because I took ASL for a year when I was in grad school and I wrote the paper that I, like, applied to PHD programs with was about Helen Keller.

Michael: Oo!

Sarah: Initially, the language was like, she was this perfect "blank space" because of her lack of language acquisition when she was a young child. The rhetoric was that, like, you know, the best of Western Civilization had been poured into her, she was reading all this great literature and she was morally very pure. It was just a weird paternalistic rhetoric -- and then she became an anarchist and no one said a thing!

Michael: *laughs*

Sarah: She was like, "I support the IWW" and people were like, *humming, pretending to ignore* "Not going to talk about her Christ-like virtue now, are we?!"

Michael: Right! Right. That's always something with, like, the social construction of disability that we never want disabled people that have sexuality or political beliefs--

Sarah: Or radical ideas--

Michael: Yeah!

Sarah: And so she went from someone whose intelligence was ranked very highly by these kind of paternalistic figures in American society, including Alexander Graham Bell--

Michael: Yes! So, for people that don't know, Alexander Graham Bell, of course the inventor of the telephone, was a pretty out-and-out eugenicist. He took it upon himself to end sign language education in America. This was his project.

Sarah: Yeah, and to like, breed out Deaf people.

Michael: Yes, because he was convinced Deafness was passed down genetically, which, there is a genetic component but of course it's not a one to one thing. He was convinced that Deaf people were genetically inferior, all Deaf needed to be forced to join the hearing and speaking world and that all sign language should be completely eradicated.

Sarah: Right.

Michael: And this is kind of the story of American Sign Language. It was invented in the early 1800s but it was never widely adopted, basically because it was stigmatized. Deaf children were basically encouraged to learn to lip-read, to speak. Some schools tied their hands to their desks or tied their hands behind their backs so they couldn't sign to each other.

Sarah: Or put mittens on them

Michael: Yes. It's a decades-long project to eradicate Sign Language. We've seen this with other forms of language used by marginalized populations, right? This casting of ASL as somehow lesser than, or a less rich version of English, or a derivative of English rather than a language on its own that has different features than English. But, like, features that are built around the fact that it's a visual language rather than an oral language. It has different structural components, the word order is different, it does plurals differently. I spoke to one of our listeners, Andrea Boyle, who's an ASL interpreter and she mentioned that ASL has different plurals. The way that you would say, "I have sisters" is SISTER SISTER I HAVE. Or, "Where do you keep the cups?" would be CUP CUP WHERE?

These are the kinds of things that people often miss when they're talking about sign language.

Sarah: This reminds me of some of the theme of our ebonics controversy episode--

Michael: Extremely.

Sarah: --because, I think this is an example of standardized American spoken english being either indifferent to the ways that other dialects or languages can improve upon the things that can do or can do things that it can't do--

Michael: Yeah

Sarah: --or if not being indifferent to it like, noticing that and maybe like not liking it.

Michael: Right, and I think you see this a lot with conversations about foreign civilizations, too, in that there's this drive to see different cultures as a degraded version of yours.

Sarah: *laughs* Oh...

Michael: Like, if you read old history books written in the early 1900s, this just suffuses every single insight. They're like, "Well, you know, Indian Society is like 2/3 as advanced as English society right now." Everything has to be put in the same ladder.

Sarah: Right, like the reasons for comparing languages to each other in a way that tries to find the superiority of some and the inferiority of others has to be politically based rather than linguistic.

Michael: Yes! It's a language, right? So, it has all the features of a language. Deaf children will babble in sign language the same way that kids will babble in spoken speech. When ASL speakers have a stroke, it affects their ability to speak ASL in the same way it affects hearing people when they have a stroke and it affects their speech. I mean, this debate is continuing because it's important for people to have a language very young -- it affects cognitive development because it gives them a language to use to speak to themselves. So, this was something that was very deliberately denied to Deaf children. So, I'm gonna read to you, this is reasonably long but I think it's just an amazing story, a letter to the editor that gets published *The New York Review of Books* in 1986 in response to an Oliver Sacks essay about basically everything we just said (the history of sign language and what the situation is now for Deaf children):

"Reading Sacks's essay was like reading a biography of my daughter. She was born profoundly deaf, a rubella victim, in 1964. It would be fair to say that at the time, at least in New Jersey, *nobody knew how to diagnose deafness*. We toted Suzannah from doctor to doctor and audiologist to audiologist for two years before someone finally had the knowledge to refer us to

Dr. Isabelle Rapin at Albert Einstein College of Medicine. Thus, diagnosed correctly only at age three, Suzannah had already missed much of the “prime time” for language acquisition.

Once diagnosed, however, she could at least start attending a school for the deaf, no? No. The New Jersey school for the deaf, *would not accept my daughter because her hearing loss was too severe*. It sounds incredible? A paradox of oralism is that oralists only wanted to teach those deaf who were not *too* deaf.

I wish I could say that Suzannah’s story has a happy ending, however belated. It does not. She *has* acquired language, at the second-grade level (a little below the usual level for the profoundly deaf). She has great difficulty dealing with the working world, even at its most menial, for the working world, even now, does not sign. The greatest affliction is not deafness itself; it is *having to be sequestered*, because only in “sheltered” environments can they meet others who share their language. The condition of the deaf today is better than it was 250 years ago, I suppose. But not much.”

Michael: This is one of the reasons why it takes these researchers *so long* to be like, “Hey! Wait a minute, there is a form of expression more suited to gorillas and chimps than spoken speech.”

Sarah: Huh, wow. Wow! So that’s a really interesting example of eugenicism and counterfactual superstition around a real language that anyone can tell is complex if they experience it for some amount of time. The problems in one area of science holding back another area of science--

Michael: Yes. Yes!

Sarah: This is science shooting itself in the foot.

Michael: Right. This is intersectional science being bad.

Sarah: *chuckles*

Michael: So, finally in 1966, this couple out of the University of Nevada in Reno start raising a chimp, Washoe, with sign language. They start *very deliberately* teaching Washoe sign language and immediately it’s just, like, a million times better. It’s very obvious that she’s finding using her hands much easier than using her voice. So, by four years into the experiment, she has a vocabulary of 132 signs. So, this is pre Koko, but she’s the first speaking chimp media darling. This gets picked up by magazines, it’s on documentaries citing, “The Chimp That Can Talk!” and the biggest thing that starts happening is she starts combining words. The famous story is that her trainer is out in a rowboat with her on a little pond outside of the university campus, and Washoe looks at a swan and she signs

WATER BIRD. This is exactly how human children do this! So the existence of Washoe, the fame of Washoe, and this WATER BIRD thing gives rise to the debate that is really central to Koko and the debate around sign language and ape communications for the next 30 years. That is, there's two schools of thought about how people learn language. The behaviorist explanation, this BF Skinner stuff, is basically there's nothing special about humans. When children babble their parents ignore it, ignore it, ignore it, and then they say, "Mama" and parents are like, "Yaaay!" They're rewarded so they think, "I'll say Mama again." Over the course of the childhood, children are being reinforced for saying words, not reinforced for babbling. Eventually, they start to build up a vocabulary, sentence structure, word order -- this is how all of us learn language, with thousands of little tiny reinforcements.

Sarah: We individually are like a thousand monkeys on a thousand typewriters coming up with random combinations and we hit the right thing occasionally and our parents are like, "Yeah!!!"

Michael: Yes!

Sarah: Okay, so that's that theory.

Michael: That's the behaviorist theory. The biological theory, or, The Noam Chomsky Theory, (this is how Noam Chomsky becomes famous) is this idea that humans are biologically hardwired for language. There are certain structural elements that are common to every human language. The Chomsky argument is basically, there's too many words for us to learn one by one by reinforcement, because then we'd all be, like, age 27 by the time we had a full vocabulary. There's something about the human brain that makes us vacuum up word orders and syntax and grammar much more quickly than other behaviors. We have these "slots" in our brain where language goes and we fill those up very quickly without that much prodding, basically. This is one of the central debates of human development and if you're a behaviorist -- if you follow this Reward and Punishment logic -- you're like, "Well, we can teach apes to speak, too. All we're doing with human babies is just teaching them one by one: words words words. We can do the same thing with a chimp, and a chimp is never going to have the vocabulary of a 65 year old or whatever, they're never going to be reciting Shakespeare, but you can get them to the same place as a three-year-old or a five-year-old, potentially. They can start doing simple sentences. You can get them to start doing simple reflections, simply based on rewarding or punishing them for delivering certain signs."

Sarah: It's interesting, because I-I do take a behaviorist approach to a lot, and I think that plays a significant role in language acquisition. We can see that language acquisition is socially enforced and that it's part of socialization. But I also -- I mean, basically, what I've read about Chomsky's theories is that there are all these things that human children somehow magically know how to do at certain intervals and a lot of it relates to grammar and sentence structure. My understanding is that if you ask a two or three-year old, "What do you call a monster that eats sand?" they'll say, "Sand eater," and if you ask that same toddler, "What do you call a monster that eats grapes?" they'll say, "Grape eater," not, "Grapes eater." They understand, somehow inexplicably, that you make the thing it eats singular. There's like a million other things like that where they just kind of *know*.

Michael: Yeah -- and I mean, huge spoiler -- whenever we see a binary like this we should get very suspicious, right? *chuckles* When it's like, "Is it nature?! Or is it nurture?!" It's very obviously both.

Sarah: And also, nature effects nurture, and, I mean, you can't -- separating those two things is very strange.

Michael: Yeah, but what happens as this debate becomes, this like, paradigmatic debate within psychology, every psychologist like...gets an ape.

Sarah: *chuckles* You get a psychology degree and they're like, "Here's your ape!"

Michael: *laughs* Yeah. People start designing their own versions of sign language. People start making computer keyboards. Someone writes a book called, *Why Chimps Can Read*

Sarah: Hmm...

Michael: This becomes, like, *the* new hotness in psychological research -- to try to, sort of, prove Chomsky wrong. To prove the thesis that ape's can communicate simply based on reward and punishment -- and this is how we meet Koko. At the time, this is actually interesting to think about, gorillas were seen as oafish and sort of the troll/balrogs of the ape world.

Sarah: That's why they're depicted that way in *The Planet Of the Apes*! They're like, the cops.

Michael: Yes! Chimps are the smart ones, and gorillas are these big dumb oafs so no one is doing anything with gorillas.

Sarah: And orangutans are Dr. Zauis!

[LAUGHTER]

Michael: Koko is born on July 4th, 1971, at the San Francisco Zoo. Her name is actually not Koko, it's Hanabi-ko, which is Japanese for "Fireworks Child," and right after she's born she's ill. She's basically taken away from her family because I think she has pneumonia/these other conditions, they don't know what's going to happen with her and they're very worried she's not going to make it very long. So, she's already kind of isolated from day one and then, along comes this 24 year old graduate student, Penny Patterson, who essentially shows up one day and says, "I would like to teach this gorilla sign language -- I want to do this for my grad school research." The zoo basically says, "We don't think this gorilla is gonna live so...yeah."

Sarah: Have a blast, do whatever you want, we don't think she's going to be with us for very long.

Michael: So, she starts coming all the time, spending hours and hours there with baby Koko. She eventually moved Koko out to a special facility.

Sarah: Oh! So, she and Koko bond because she's with her when she's really young.

Michael: Yes.

Sarah: How old is Koko when she and Penny meet?

Michael: Koko's 1 year old.

Sarah: So Penny's like a primary figure in her life.

Michael: Oh, yeah. This is like a mother/daughter relationship. So, very quickly, Penny starts teaching Koko all these signs. By the time she's just a couple years old, Penny says she can say 600 words -- she has this huge vocabulary.

Sarah: Wow!

Michael: She's developing much faster than the chimpanzees, as well. So, all of the sudden, a lot of the emphasis shifts to gorillas.

Sarah: Ohhh, so is there this argument that gorillas will become the "super communicators" of the ape world?

Michael: Yes.

Sarah: Because we must be competitive! The apes must compete for us in the Arena of Intellect!

Michael: *laughs* So, I am going to show you a clip of Koko and Penny relatively early in this process.

Sarah: Yay!

Michael: This is very, very cute.

[AUDIO CLIP BEGINS]

Reporter: Research psychologist, Penny Patterson, is teaching lowland gorilla, Koko, the American Sign Language of the Deaf.

Penny: (speaking to Koko) Can you find...something soft? Is there something soft here? *pause* YES! That's soft! *lowers voice* Soft.

Reporter: With Reading Readiness Tests, used with human children, Patterson tests Koko's grasp of concepts.

Penny: (speaking to Koko) Yes! That! Good! And you said, "The tree"? You showed me the tree and that was wrong, huh? Anything else? Wrong? Yes! *excitedly* That! And a tiger, that is a bit weird!

[AUDIO CLIP ENDS]

Michael: Okay, what did you think?

Sarah: *laughing* I really like it. I like watching videos of Koko. My sense is that Koko is communicating and that she's getting bored very easily. It feels like this beautiful, huge, 2 year old. This is the kind of thing you see when you're a little kid and you think, "I want to work with primates, also!"

Michael: *chuckles* Yeah! Yeah. What's remarkable to outsiders is not just how many signs Koko can do but the ways in which communication is revealing her personality.

Sarah: Mmm!

Michael: So she's very funny and sardonic. Apparently, there's one time a trainer is trying to get her to make the sign for DRINK (placing your thumb to your lips) and they're trying to get her to do it, she doesn't want to, and then eventually she does the sign but she does it in her ear.

Sarah: *laughs*

Michael: She also very quickly starts making up new words.

Sarah: I remember this! I remember some of these, can I tell you the ones I remember?

Michael: Oh, yes! Go, go go!

Sarah: I remember that she made FINGER + BRACELET because she wanted to communicate “ring”

Michael: Oh my god, YES!

Sarah: DRINK + FRUIT for “melon”

Michael: Yes! She also calls “icecream” MY COLD CUP

Sarah: Awww! MY COLD CUP, that sounds like a band!

Michael: Yeah! And “nectarine yogurt” she calls ORANGE FLOWER SAUCE.

Sarah: ORANGE FLOWER SAUCE, wow.

Michael: It’s pretty good. Also, a really big deal, she starts lying.

Sarah: Mmm!

Michael: This was not something that people sort of knew, in any regular sense, that animals could do.

Sarah: People that didn’t own *cats* didn’t know that.

[LAUGHTER]

Michael: So, apparently, she breaks the kitchen sink and someone walks in and asks, “Who broke the sink?” and Koko theatrically points to another staff member. Penny starts to notice that she’s like, sort of, eavesdropping on her. Apparently, Penny is talking to another researcher and says, “Ugh, driving to Los Angeles once a month is gonna kill me,” and immediately Koko runs up to her and starts signing FROWN FROWN FROWN meaning, “I don’t want you to leave me.” So, they start spelling out words the way you do around children like, “it’s going to K.I.L.L me” so Koko can’t listen in.

Sarah: Yeah.

Michael: She apparently starts roasting her other researcher. There’s another guy named Ron Cone, who’s one of the other researchers with Penny. He’s kind of the disciplinarian - him and Penny kind of had a good cop/bad cop vibe. So people at one point ask Koko, “Who’s Ron? What’s Ron like?” and she signs STUPID DEVIL

Sarah: *laughs*

Michael: This is harsh -- one time they asked her, "Do you tell jokes, Koko? What's a funny joke?" and she signs, I LOVE RON

[LAUGHTER]

Michael: Damn, Koko, roasted!!

Sarah: *laughing* Oh, Ron! Nooooo.

Michael: She starts doing poems so she'll say, FLOWER PINK FRUIT STINK and these other "fridge magnet" type rhymes. This is a thing -- she becomes obsessed with nipples.

Sarah: Yeah! I've read about that. When does this start happening?

Michael: This is very young -- one of the theories on this is that she wasn't breastfed by her mother so she always had this weird fixation with nipples.

Sarah: ...Huh!

Michael: Like, Robin Williams eventually goes and visits her and he talks about how she puts her head under his shirt, reaches under his shirt for his nipples and is like, "Show me your nipples." This is a thing that she's really obsessed with.

Sarah: I mean, Howard Stern does that, so...

Michael: *laughs* yeah

Sarah: It's somehow not newsworthy on his show.

Michael: And apparently Penny asks her once like, "What's your deal, Koko? Why are you so obsessed?" and Koko signs NIPPLES ARE NIPPLES. Which is like, you know what? She's not wrong.

[LAUGHTER]

Sarah: Koko is just like, generating endless EDM titles, right? "Nipples Are Nipples" by My Cold Cup.

[LAUGHTER]

Michael: Koko eventually gets to 2,000 signs.

Sarah: I thought you were going to say 2,000 nipples.

Michael: I mean, she's probably at more than that, honestly.

[LAUGHTER]

Michael: They try -- A big thing is they want her to have a baby because they want to figure out if she'll teach her baby to sign. They bring in this other chimp, Michael, to try to have her mate with but apparently, he's much younger than her and they don't really get off on the right foot. She kind of friend zones him, like, they just sort of have a brother/sister vibe. Apparently, there's incest taboo among gorillas.

Sarah: Koko's like, "I have a personality. This guy is not ticking my boxes."

Michael: So, that doesn't really work. They bring in another gorilla, Ndume, from the Cincinnati Zoo. Koko chooses Ndume from videos -- it's like old video dating websites -- they show her all these clips of different gorillas.

Sarah: What?! Oh my god, so Ndume does his video and he's like, "I'm kind of a homebody gorilla. I enjoy a woman who wants to see my nipples and asks to see my nipples" and Koko's like, "Yes!"

[LAUGHTER]

Michael: So, they bring in Ndume, but that doesn't really work, either. I think it's because he's also younger than her....it just never quite works.

Sarah: He shows up and she's like, "I liked you better on the video"

Michael: *chuckles* Yeah! Something I can *extremely* relate to.

Sarah: I love how Koko has the same problem as Janet in the movie, *Singles*...that's a video dating joke. That's very niche Camerson Crowe content for you.

[CHUCKLING]

Michael: So, despite these troubles, this is when the sort of, "Koko Fame" goes into overdrive.

Sarah: I love that we're doing this like, *Behind the Music: Koko*, like, "Despite her problems with finding a mate, Koko took over American culture as her success skyrocketed!"

Michael: Don't roast my transitions! How else was I gonna get out of that? That was my only move.

[LAUGHTER]

Sarah: No! I just like that it feels like an episode of *dramatically* *Biography!*

Michael: Yeah. That's all I got! These two things are adjacent in my notes, that's the only way I could go from one to the other

Sarah: It's like reading, "Coal Miner's Daughter," by Loretta Lynn. Like, wow, at the same moment there are personal struggles she's topping the charts! There's irony here!

Michael: *laughs* So, what happens is in 1978 she's on the cover on National Geographic.

Sarah: I think I have that issue of National Geographic, actually

Michael: Do you remember what it shows?

Sarah: I believe it was her and All Ball?

Michael: That's the second cover--

Sarah: Ohhh, that's the second cover, I don't know what her first cover is.

Michael: It's very interesting! It's a photo of her taking a photo of herself. It's like we would now understand as a mirror bathroom selfie -- she's holding a camera up to her face taking a photo. So, it evokes this image that is very important to a lot of the rhetoric you see at time: she is regarding herself. She's looking at herself, she's looking at us--

Sarah: Right, she has self awareness--

Michael: Yes. There's a movie called, *Koko, A Talking Gorilla*, this documentary that comes out. *Koko's Kitten* comes out and it's on *Reading Rainbow*

Sarah: Ahhhh....Oh, wow, so Koko is having a *Partridge Family* experience

Michael: Oh, yeah, she's huge. She shows up on *Mr. Rogers*. There's this whole thing with Robin Williams -- he comes and hangs out with her and then he does a story about her in his standup set. Apparently, when he dies in 2014, they tell Koko and she slumps her shoulders.

Michael: She was in the first ever "interspecies chat" on AOL--

Sarah: WHAT?!

Michael: --which is a huge time capsule, HUGE time capsule

Sarah: I know it was with a human ber but in my head she's talking to a bird

Michael: *laughs* Yeah, I mean, so much of the rhetoric at the time -- I read a bunch of essays that came out in the late 1970s in the early 1980s about this -- in hindsight, was pretty lofty rhetoric about Koko's ability to reason and reflect. The idea is not just that Koko is delivering ME WANT FOOD type of utterances, but she's thinking about death. She's thinking about her relationship to people--

Sarah: She's remembering people she met years ago and grieving them--

Michael: Yeah! So, this is from a 1980 essay in a magazine, *Omni*, which is now defunct:

One thing is clear about Koko: Patterson has not "humanized" a gorilla; the gorilla has seized on a useful human system to express its own nature.

Sarah: Oh, are they saying that Koko is communicating her true Koko-ness?

Michael: Yeah, that finally, apes have a system of language with which they can tell us about themselves, right? Now there's a bridge built between the two species. There's a story, this shows up in a lot of old articles, where Penny is cleaning up after Koko's toys on the ground and she mutters, "Ugh, why can't you just be like any other kid?" Koko shrugs and signs GORILLA.

[CHUCKLING]

Michael: These are the kinds of stories that go around that indicate the wry sense of humor and understanding of the layers of what's going on.

Sarah: This reminds me the way people will post alleged interactions they've had with their 2 year old, you know? Like, "Today my 8 month old looked up and me and said, "Abolish the police, daddy!" or whatever. I think we do that. I think we really as humans have a tendency to interact with an articulate being, to become enamored with a being who's just articulate *enough* for us to map our own thoughts and ideas on to. I wonder if that's relevant here...

Michael: *laughs knowingly* And then...in 1980 it all falls apart.

Sarah: Man! Just like a Scorsese movie!

Michael: So, to do the debunking, we're going to have to meet someone named Herb Terrace, a Columbia University psychologist.

Sarah: Hello, Herb!

Michael: Herb Terrace trained with BF Skinner. He's a dyed-in-the-wool behaviorist, right, that language only comes from training. In the wave of every psychologist getting an ape he gets this chimpanzee. As a troll to Noam Chomsky he names it Nim Chimpsky -- the entire purpose of his project, basically, is to prove Chomsky wrong.

Sarah: I love academia wars! We've talked about this before, I think it's just the best.

Michael: He spends four years doing everything with Nim that Penny is doing with Koko: signs, tests, etc. He becomes completely enamored with Nim the same way that Penny is enamored with Koko. He's a true believer, right, that like, they are signing, it's meaningful communication--

Sarah: Man--

Michael: But--

Sarah: But?!--

Michael: Then he sits down and watches the tapes. Part of what they need to do in this process is log all of the utterances that Nim is making, right. What sentences, what is he asking for, what word order is he using - they're trying to do a mathematical analysis--

Sarah: They're trying to figure out if he has a grammar, I would imagine?

Michael: Yes! Yes.

Sarah: Right, like is he consistently using the same word order? Is he acquiring language? Or has he acquired words but not grammar?

Michael: Yes, exactly. To do that you need to be systematic. So, he sits down and starts doing this systematically. In 1979, he publishes an article in *Science*, "Can an Ape Create a Sentence?" to which he answers, "No." He also writes an article the following year, specifically about Koko, called, "Why Koko Can't Talk," which is basically the grenade he throws into the middle of this entire field of psychology and primatology.

Sarah: Hmm...So, is he arguing that they don't even have meaning? That they're not even referring to something the ape is looking at?

Michael: What he says -- this is from a 1979 *New York Times* article:

"New evidence by a researcher shows the apes may be doing nothing more remarkable than a dog does in learning to sit or heel."

Sarah: Wow...

Michael: So, one of the things that he does is make a log of all of Nim's utterances. This appears in the 1979 *Science* paper and it doesn't follow any form or structure. Here's a couple of them:

PLAY ME NIM
EAT ME NIM
EAT NIM EAT
TICKLE ME NIM
GRAPE EAT NIM
BANANA NIM EAT
NIM ME EAT

The longest utterance Nim ever makes is 16 words. I'm going to read it to you, get ready:

GIVE ORANGE ME GIVE EAT ORANGE ME EAT ORANGE GIVE ME EAT
ORANGE GIVE ME YOU

Sarah: Right, so he's just repeating the same idea many times.

Michael: Yes, so what he says is that even in the youngest child, if you have a child who's capable of making a sixteen word utterance, you would never see something that repetitive and devoid of meaning. Oftentimes, what you see with children is they'll start out saying very simple phrases and then they'll begin to add information. The example he used in his article is a kid would say, "sit chair" and then that progresses to, "sit daddy chair" or "sit me chair." It wouldn't be, "sit chair chair" -- that's not a pattern you see in children.

Sarah: Also the speed at which toddlers are acquiring words is like--

Michael: Super remarkable

Sarah: Yeah! Like, toddler language ability is defined by the fact that you're constantly acquiring stuff. You'll say a word to a toddler one time and they'll use it a few hours later. Like, "How did you notice/remember that and use that correctly?!" They're going through this, like, *Spider-Man* mutation experience with regards to language

Michael: Another thing that he finds that's really interesting, that you don't see in children, is it the vast vast vast majority of the utterances of the apes are goal-oriented. There's all that stuff about reflection and jokes and stuff, but 96+% of what

they're saying is FEED ME, TICKLE ME. You don't need *language* to express those things, right. So, this is what he says about Koko:

“Penny Patterson is all too ready to project human meanings onto the imitative utterances of an ape who is simply trying to manipulate its teachers to feed it or engage in some kind of social activity.”

So it's basically an exercise in just, like, basic desires, right -- I want to eat, I want to sleep. Anything deeper than that is essentially projection by the researchers.

Sarah: Is it a thing where Koko is producing so many utterances in the course of the day that some of them, inevitably, are going to kind of match the situation?

Michael: Yeah! Yeah, I'm going to show you another clip that I think demonstrates this really well. This is Koko and Mr. Rogers:

[AUDIO CLIP BEGINS]

Mr. Rogers: How do you say, “love” for sign language? How do you say, “love”?

Penny: [to Koko] Can you show him how to say, “love”? How do you say, “love”?
[voicing for Koko] What's...that...flower. She's asking you about your cufflink, is that a flower?

Mr. Rogers: That's a sun. My grandfather gave me that.

Penny: [to Koko] That's a sun! It looks like a flower, though!

Mr. Rogers: It does look like a flower.

Penny: [to Koko] Can we talk a little bit about love? Frown?! Oh, honey, what? Love?! Love. You!

Mr. Rodgers: Oh, is that--

Penny: She says, LOVE YOU VISIT LOVE. Well, that was very nice!

Mr. Rodgers: Awww, thank you, Koko

[AUDIO CLIP ENDS]

Sarah: Uhh--there was a lot happening. That was 46 seconds long and there was a lot happening. So, they're like, “Koko, how do you say love?” and she's like, “TELL ME ABOUT THIS CUFFLINK. I'm interested in *that* right now.” So, they do that for a while and then Penny's like, “What about love, Koko?”

Michael: Yeah. You can also see that she's just imitating Penny. Penny's like, "Let's talk about love" and she makes the sign for love. Then Koko does it and she's like, "Oh, see?! Koko loves you!" when all she's doing is reproducing what Penny just did two seconds ago.

Sarah: She's responding to the physical cue.

Michael: Yeah!

Sarah: Do you think she asked to see Mr. Roger's nipples?

Michael: *laughs*

Sarah: All right, let's just move forward, we can't dwell on this.

Michael: This is something you see a lot in the footage of Penny and Koko. One of the things that's really interesting is Penny has never released any raw data or raw footage of her and Koko. So, research methods wise, and this is a big part of Herb Terrace's critique, a lot of these researchers that are producing like, "This ape can say 150 things!" are not actually giving any of the background data of, "Okay, we recorded her for 8 hours, here's the tape." It's all these very carefully snipped together clips, like the one we saw earlier that has a lot of cuts in it, and you don't know how much they're cutting out. What oftentimes happens in the few long/one take clips of Koko and Penny that *do* get revealed is she'll say something like, "Koko, what color is this ball?" Koko signs DRINK. She'll say, "Haha, quit playing around, Koko!" Koko signs, ELEPHANT. Penny says, "Oh, she's kidding!" She'll basically keep prodding Koko until Koko gives the right answer, then she'll say, "See?! She can talk!"

Sarah: So is it like, you can read it as her being just distractible and not focusing very well, but really she's just producing signs until she gets it?

Michael: Basically.

Sarah: It's always very interesting to realize how we ourselves are being cued to view footage.

Michael: Yes! This is from the transcript of the AOL chat session. This is very 90's:

"SickboyRE: Koko, have you taught other gorillas sign language, on your own?"

DrPPatrsn: Good question.

LiveKOKO: myself lip

DrPPatrsn: She taught herself. That's really true, too. That's very good and I think what part of that answer might be, is that she's taught us. In other words, 'myself lip' was her answer and 'lip' is her word for woman. So 'herself' has taught 'lips', perhaps."

Sarah: Eh...

Michael: I don't know, Penny...

Sarah: SickboyRe didn't get an answer, did he?

Michael: Exactly! When you back through the footage there's just a lot of that kind of stuff, a *very* selective interpretation. Terrace also finds with Washoe and other earlier studies that oftentimes on the IQ Tests they'll ask, "What color is the ball?" while holding up a red ball. He'll sign BLUE and they'll mark that as correct because it is a color.

Sarah: There's a lot of grade inflation happening here.

Michael: *A lot* of grade inflation. This also explains the WATER BIRD thing. One thing Terrace notices is that when they ask Washoe, "What is this bird that you see on the lake?" and she signs WATER BIRD, she could have just been signing WATER and then BIRD, right. There's no indication that she's using a compound word there. She's giving out signs all the time: BOAT WATER SKY RED FRUIT DRINK. She *happens* to sign WATER and BIRD in that order and they're like, *gasp!* "She's creating compound words!"

Sarah: So you think this is at the level of the humans tricking themselves the entire time?

Michael: I mean, the human intervention affecting this -- this is another thing that Terrace finds in his research, almost all the signing that Nim is doing is directly in response to researchers. He almost never starts conversations. He interrupts at random intervals. He doesn't listen and then deliver a sign, listen, sign, etc. He signs willy nilly whether or not someone else is signing at the time which is another thing very young children begin to understand -- conversations are give and take. He's not following a pattern you see in young children.

Sarah: Yeah

Michael: The main metaphor that Terrace uses is that you can teach a pigeon to peck, "A, B, C, D" and a pellet will come out. Instead of "A B C D" you could write on the buttons, "I Want Some Food" and when the pigeon does it you can exclaim, "The pigeon can read! It's asking us for food!" It's not. The pigeon is not understanding those symbols.

Sarah: Okay, so the argument is that for the apes, these signs are basically empty signifiers and they have figured out, kind of, that some of them will get the response they want at various times, but even with that knowledge they're throwing them out a little randomly.

Michael: Yes!

Sarah: Yeah. This is like when I was in 8th grade and I tried to teach myself how to sing the Chinese language version of, "Anything Goes," from *Indiana Jones and the Temple of Doom*. I did know parts of it at times but like, nope! Didn't speak the language *laughs*

Michael: But that's the thing! If somebody told you, "Make this gesture and I'll give you a banana," you'll make the gesture. Whether or not you understand that gesture *means* banana and can use it in other contexts? There's really no indication of that. Koko does something and she gets a banana and she thinks, "When I move my fingers like this I get a banana."

Sarah: She's like, "These people are clearly very invested in me making these gestures they are teaching me so I'll just kind of cycle through a bunch of them all in a row."

Michael: Yeah. This is what Marcus, the researcher who spent two years working with Koko, said when I asked him where he falls in this on-going 30 year long debate -- he said, "Koko is really good at getting what she wants."

Sarah: *laughs* That also sounds like it's from a *VH1 Behind the Music* episode! "Koko is really good at getting what she wants and that is my answer to your question."

[LAUGHTER]

Michael: I mean, one of the interesting examples of projection here, that I think is worth dwelling on, is this whole thing of Robin Williams. The story goes around that Koko reacts to Robin Williams's death. She slumps her shoulders, she signs CRY, but this was 2014 and Robin Williams spent one afternoon with her in 2001. It's like, Robin Williams is special to *us* because he's in movies we watched but there's no indication that he's spec-- Koko spent an afternoon with thousands of people by that point.

Sarah: Has Koko seen *Hook*?

Michael: *laughs* It's unclear.

Sarah: We have this parasocial connection with celebrities in a way that, maybe God bless them, other animals don't have. You don't hear a lot about celebrity fish, do you?

Michael: *laughs* So, what's amazing is after this article comes out, Herbert Terrace's book comes out, the field implodes. So, there's now just one place where they're still doing this type of research in the whole world.

Sarah: Hm! So the ape language boom has ended?!

Michael: Yeah! Herb Terrace basically killed it. This is a quote from Sue Savage-Rumbaugh, one of the few researchers still doing this:

"Ape language research went from being a field of perceived intellectual excitement and public claim to one that, at best, should be viewed askance. Suddenly, it became extremely difficult to have research papers reviewed, let alone published. And funding for the major project dried up overnight."

Sarah: Hmm..

Michael: And this quote hints at the next section of our debunking--

Sarah: Oh, gosh...

Michael: It says, "Ape language research has yet to recover after Herb Terrace's surrender to Chomsky -- A turnaround that felt especially treacherous considering the inexactitude of Terrace's own science."

Sarah: Mmmm!

Michael: Dun dun dun!

Sarah: "Surrender to Chomsky" sounds *very* sexaul, I have to say.

Michael: *laughs* I know!

Sarah: If that were a romance novel I would read it.

Michael: We're now going to get a quote from Arden Neisser who wrote a book called, *The Other Side of Silence: Sign Language and the Deaf Community in America*, which comes out in 1991. And she has a really fascinating chapter of this book about the ape language debates -- sort of told from the perspective of Deaf people and people who speak ASL. So, she starts her chapter by saying:

“During the spring of 1979, I realized that I had been meeting a number of people, hearing people, who are very excited about ASL -- not because 500,000 Deaf Americans use it every day but because they believe it might be taught to Apes.”

Sarah: Mmm..

Michael: This gets to Herb Terrace, Nim, Nim Chimpsky, the entire field -- This is a double debunking of this: Nobody who was working with the apes spoke fucking sign language!

Sarah: Ahhhh....Lawdy, Ms. Clawdy

Michael: So what they're basically doing, it's a lot of hearing people that don't speak sign language, they don't know the structure of sign language, they're signing ASL words in english grammar -- it's this weird pidgin ASL. This is from a *Harper's* essay, which I believed was published in 2012:

“Nim was snatched from his protective mother in an Oklahoma chimp colony just after his birth and put into a household in New York City where nobody was a fluent signer. The household, a prosperous hippy family, modeled neither a sign-language environment nor what was normal for chimps nor what was normal for human children (they allowed Nim alcohol and marijuana). He had no discipline, no intensive exposure to use of sign in context, and Herb Terrace rarely visited. Nim was just a pampered wild animal kept as a household pet.”

Sarah: Why do people do this with chimps?!

Michael: I *know*!!

Sarah: It's so weird.

Michael: It's also-- I mean, the field was just moving too fast. Apparently, this guy, Herb Terrace, got a chimp without really thinking it through, then sent it to a friend of his who was a Freudian psychologist in an upper west side Manhattan brownstone. This Freudian psychologist lady, apparently, was much more interested in Nim's oedipal complex and the fact that he kept touching her breasts even though she was a mother figure to him like -- that's what she was interested in?!

Sarah: Humans are gross. That's the lesson, the big reveal of this episode and, ya know, unsurprising! We're not finding anything bad out about Koko--

Michael: No!

Sarah: --we're canceling all the humans!

Michael: Yes!

Sarah: Cancel humans!

Michael: Humans. Canceled. I mean, one of the sub threads in all this is that nobody has doven, div--

Sarah: Diven.

Michael: --into is the way that psychologists, kind of how economists do now, thought that they were qualified to do *fucking anything* in the 1970s.

[LAUGHTER]

Michael: Yep, I'm a Freudian psychologist! I'll just raise a chimpanzee from birth.

Sarah: I'm a white guy! I know how to do it! I read *four* books last year!

Michael: I don't speak sign language!

Sarah: I don't know anything about it so I assume it's not very complex.

[LAUGHTER]

Michael: So, he just puts this chimp into a brownstone. They're treating it as a child. They're not really doing any specific instruction. Eventually, he pushes out the Freudian psychology lady in favor of someone named Laura-Ann Petitto, an 18 year old graduate student, who I think he's sleeping with at the time. He's kind of like, "Uh...you, you take over."

Sarah: I bestow my monkey upon you, Laura!

Michael: The two women don't really get along--

Sarah: Oh my God, and then there's chimp custody battles and stuff?

Michael: Apparently, they start taking Nim to this empty/bare classroom on the Columbia University campus where there's no toys, there's nothing to do, nothing to climb or play on--

Sarah: That's weird...

Michael: --and they just do these language drills.

Sarah: Because they think it's cute to treat him like a college student?

Michael: Yeah! It's just a bunch of language drills and instruction all day. This is a wild animal! It wants to jump, play, use its energy. It doesn't want to sit at a desk. One of the things they say is, "really remarkable" is that Nim can lie/use manipulation. It's because he keeps saying he has to go to the bathroom so he can get out of the room.

Sarah: *sadly* Mmm...This is like our "Alpha Males" episode. Turns out if you put an animal through something that's completely confusing to it, completely unlike anything they would encounter in their actual lives -- of course you're going to get weird results out of it! Don't mistake those results for data of what they're like as an animal. Take those results for what kind of behaviors you can get out of these very weird circumstances.

Michael: Right! Terrace, on some levels, admits this. I found a couple of old interviews with him after his book comes out and in one of them he says,

"I couldn't afford to pay permanent staff and so relied on volunteers. In all, Nim was taught by 60 different people very few of whom formed close bonds with him."

Sarah: *laughs*

Michael: One of the things he mentions, sort of off hand, in his *Science* paper, is one way Nim differs from human children is that his utterances become *less* complex over time. He's not learning more language and grammar. Yeah! Because he fucking hates you! He's miserable! Of course he's saying less because he has this rotating cast of random grad students -- none of whom speak sign language -- coming in.

Sarah: Oh...god...yeah. And none of whom he has a relationship with.

Michael: Yeah! So, what he doesn't say in his *Science* paper is they had to abandon the project because Nim started attacking his handlers.

Sarah: That's what I'd do if I were Nim.

Michael: Yes! This is a wild animal, you guys.

Sarah: Do we know about the circumstances of these attacks?

Michael: We do not know. I didn't look them up because I think they're going to really bum me out but the phrase, "grievously injured" comes up a lot.

Sarah: Oh, no...Okay, what happens to Nim?

Michael:It's really bad.

Sarah: Yeah.

Michael: This happens, actually, to a lot of the apes in these studies after the field implodes.

Sarah: They're like, "We have no more ape money!"

Michael: Exactly. It's really expensive to take care of these animals. A lot of them end up in *terrible* sanctuaries like, sketchy *Tiger King*-like/side of the road random places.

Sarah: This is terrible!

Michael: So, Nim gets sent to this facility in Oklahoma, where he's born, which is apparently known among chimp people for being really bad.

Sarah: Huh...is it a zoo? What is it?

Michael: It's called a sanctuary, but it's a bunch of animals in fucking cages. So, this is from a 2012 article from *Harper's*:

"Nim entered this environment having never met a chimpanzee other than, however briefly, his mother. Terrace visited Oklahoma a year after leaving Nim there--

(and it was captured on film)

--Nim recognizes Terrace and erupts with jubilant relief, shrieking and rushing to hug him. Bob Ingersoll, who worked at the facility, infers Nim's thoughts on seeing Terrace again, "Holy shit! I'm going back to New York!" Terrace left that day and Nim never saw him again. After Terrace's departure, Nim lay still in his cage, refusing food."

Sarah: Ugh..

Michael: He ends up getting passed around. He goes to some weird ranch that takes care of horses but he ends up killing their dog. They're not set up to take care of a chimp. Taking care of a chimp is really hard.

Sarah: Chimps are incredibly strong, right?

Michael: Unbelievably strong, yeah. This is the sad ending to a lot of things. Washoe died of a heart attack really young. Herb Terrace, he's still alive and gives interviews on this. He says he tried to rescue Nim a number of times but didn't have the funding to do it. Whether we believe him or not, it's true it's very expensive. You would need some sort of infrastructure to take care of these animals afterwards and that infrastructure was never there.

Sarah: Has Penny responded to the, "Koko can't really talk" stuff?

Michael: Yeah. There was a very long conversation between her and Herb Terrace in the letters to the editor section in the *New York Review of Books* after this article comes out in 1980. She basically says that Terrace is bitter because his project failed. He never developed a relationship with Nim the way she developed one with Koko. The fact is, you can't get an ape to sign/communicate with you meaningfully if you don't have a relationship or it doesn't feel comfortable. So, her argument has always been that he set himself up for failure and then he failed. This is actually something that Marcus Perlman mentioned to me -- at the center of this research is this fundamental paradox: To get an ape to communicate freely, you have to have a close relationship with them. But, if you have a close relationship with them, you're not an objective researcher. So, anything that produces is not going to be credible to the outside world.

Sarah: Unless you have reams of unedited tape that's being screened in some kind of double blind something...

Michael: Right -- and you can't even do double blinding. Future researchers actually tried doing this with masks. But there's also body language. Apes are probably

attuned to our body language in a way that we're not aware that we're sending messages.

Sarah: Oh, yeah. Inevitably.

Michael: So it's not--I don't know--It's not -- It just doesn't seem like it's very well suited to the scientific method, right? So, the double debunking of this is that Nim, Koko and Washoe might have actually been doing *even less* communication than we think. A lot of this comes from the refusal of these researchers to take sign language seriously as a form of expression. I think the biggest tell is this idea that drives me nuts -- Koko can tell when words rhyme. She names the kitten All Ball. FRUIT SWEET MEET GREET, whatever, but these are words that rhyme in *spoken english*. Koko doesn't *know* spoken english. She speaks sign language. This is from Terrace's article:

"Only slightly less amazing than Koko's ability to create rhymes and to understand pig-Latin is her professed ability to substitute a sign for an english homonym of a word she does not know. For example, Patterson says that when Koko had difficulty articulating NEED she would occasionally use KNEE, a sign that sounds like need but is made in sign language in an entirely different manner. She has also, on occasion, interchanged signs for I/EYE, NO/KNOW, and ELEVEN/LEMON and others. The last example is particularly revealing. As far as I can tell, Patterson never mentioned Koko's ability to count or to use numbers. Why, then, would Koko sign ELEVEN?"

Sarah: Hm! So they are contending that she's learned two languages, actually.

Michael: Yes! It's just a sign that nobody really reckoned with the fact that sign language is a real form of communication. It, of course, has its own rhymes, own puns, own regional dialects. Everything you have in a language you have in sign language. But, the researchers were still coming to it with a very english-centric view of what the ape's were actually doing.

Sarah: *vocalizes agreeance* And a very oralist view.

Michael:: Yeah. So, this journalist, Arden Neisser, she's working on her book about the Deaf community in America and at the New York Public Library, she bumps into a Deaf guy who was one of the only Deaf researchers to work with Washoe. This was early. He didn't actually work with Washoe but he worked at the same facility as Washoe--

Sarah: He was co-workers with Washoe.

Michael: Yes. She says:

“Tell me what you did there” He says, “I wasn’t there long. There was a very high turnover among the Deaf. The Gardners wouldn’t listen to anything the Deaf people told them about ASL. They thought we didn’t know anything about it and we’re just trying to make trouble. There are three shifts a day. I’d go in, wake up the chimp, change the diapers, and put clothes on. Sit him in a chair and warm up milk. Just like for children. I put a little bit of milk in the cup and waited for the sign DRINK. Thumb in mouth. I made the DRINK sign. Waited. When he made it, I’d put a few drops in the cup, and wanted for the sign again. He folded his hands and sat back, waiting. By this time the chimp was screaming, even I could hear it. I wasn’t supposed to give any food until he made the EAT sign. I watched really carefully. The chimp’s hands are moving constantly. Maybe I missed something, but I don’t think so. I just wasn’t seeing any signs. The hearing people were logging every movement the chimp made as a sign. Every time the chimp put his finger in his mouth, they’d say, “Oh, he’s making the sign for DRINK,” and they’d give him some milk. For part of the day, I was just supposed to sign to the chimp about things he knew, things around the place that he knew the signs for. I signed my head off. That’s what I was being paid to do; but mostly the chimp didn’t seem to notice.”

Sarah: Uh huh...

Michael: So even with these utterances of ME DRINK EAT NIM EAT, whatever -- some of that is projection, too.

Sarah: Right. So, the rhetoric around this is like, “Isn’t this amazing that we’ve taught these apes to communicate! A language! This thing that they needed we have given to them like Prometheus with the fire!” And, no. We were forcing them to do this thing they are rotely, mechanically doing because they’re hungry and bored.

Michael: Right. Arden Neisser also spoke to Laura Petitto, the researcher who joined the Nim project when she was only 18 or 19 years old. She is now a researcher of ASL and how Deaf children acquire language. She was the only one actually taking classes in ASL/trying to learn actual ASL rather than these floating signs. Neisser asks Laura how she feels about the experiment now. Petitto says,

“It haunts me. I think about it all the time. All sorts of questions remain, questions I never thought to ask while the project was going on. I think the truly fascinating things about the chimp’s social and emotional behavior have not been studied. Nim had, I’m sure, an intact communicatie system *above* the system we gave him, and we never tapped into it. We only scratched the surface. Nim didn’t do anything with the signs. He only used them for requesting things -- and even that is too anthropomorphic a description--he never used them in the deeper human sense of making a request. It was an entirely different sort of transaction. It was pragmatic, social, emotional. Nim could never quite understand he was communicating. He never used the signs as a cognitive tool, and I do not believe that he used them to think with. He was never able to make certain connections; we imposed those connections of meaning and communication. He had his own powerful, deeply wired communicative devices. What we added was insignificant. It didn’t really add a thing.”

Sarah: Hm...

Michael: And it's like, yeah?! *chuckles* I wrote in my notes, "Apes are apes, dude!" In the same way we talked in the beginning of this problem of placing species, languages and civilization on this literally one dimensional spectrum of "Backwards to Civilized." That doesn't allow you to look at the differences and celebrate them without adding a value judgement to them. So, sometimes you have to remind people that humans are not descended from apes. Apes are not a degraded version of man. We have a common ancestor but the common ancestor was 7 million years ago. It's not like we were once apes and now we're people. It's that we diverged on this forking path and we've spent 7 million years developing, *and so have they*. So they have adapted to their environments.

Sarah: Right.

Michael: I mean, one of the things you find in the biology books is that a very good reason why apes can't learn sign language is because they still walk on their hands a lot more than humans do. They swing from trees--

Sarah: Right...right! We hardly ever walk on our hands!

Michael: I know! They literally use their knuckles to walk around on the ground. Our hands are made for dexterous, you know, tool building, delicate gestures while apes are doing much more basic functions like holding on to trees and hanging from them.

Sarah: It's very interesting to me-- At this moment, the 1960s, when Americans are really experiencing this cultural wave of, "Did we get the fuzzy end of the lollipops when compared with the chimps?" I mean, chimps do wage war on other chimps and stuff, but nothing on the scale of Vietnam, I have to give them that.

Michael: *chuckling* Right.

Sarah: I wonder if there was this weird, sick, human impulse in America at the time? At this moment when anxiety about what civilization had done to us and what we had done to ourselves was at this spectacular high. When people were being very public about these anxieties, like, sitting on the bus reading *The Population Bomb*.

Michael: Oh, God...

Sarah: Did we have this need to take these blameless apes and force them to try and do something that they could *kind of* do? It's so interesting. It's so different from field work where you'd be going out and attempting to observe the chimps and

understand the conditions they live in by experiencing them as much as you can by just quietly watching the chimps be chimps.

Michael: Yeah. I mean, this is-- This sort of gets to the third generation of ape research. It is much more now about descriptive studies. So, Marcus, the researcher that I interviewed that was with Koko, found gorillas actually do much more vocal and oxygen control than we thought they did. Gorillas deliberately cough. They'll blow a raspberry when they want a treat or something. So, you're not teaching them vocal control. This, sort of, over humanizing of apes and this *need* to see apes as some version of ourselves is really what brings us back to Koko and what explains the later years of Koko's life.

Sarah: Oh, gosh, what are Koko's later years like? Is this like the Motley Crue story? Koko's Sunset Boulevard years...

Michael: In some ways, Koko's really lucky in that she wasn't taken away from Penny. They were getting donations from newsletters and various people would give donations to the Gorilla Foundation to keep Koko housed and fed.

Sarah: Koko was famous enough to be financially secure in her old age.

Michael: Yes! Penny never left her which, in a lot of ways, is this really sweet, giving, caring thing. But then we also have reports from people who worked at the Gorilla Foundation. First of all, they asked everybody who leaves to sign a non disclosure agreement which is not a great sign--

Sarah: Unless you're Beyonce!

Michael: Then in 2012 we had an open letter from a lot of the staff members there saying Koko is fed a human diet and she's not very healthy. Penny will mention casually, "Koko loves pizza!" and actual primatologists have said, "She should not be eating pizza, dude! This is not what she eats in the wild! It's not good for her." They're feeding her chocolates? Apparently the Gorilla Foundation is saying they're good because they have antioxidants in them but like, do gorillas need fucking antioxidants? I don't know?!

Sarah: The lack of oversight for working and living with wild animals is, ya know, we've all learned a lot in the last few months about how lax that can be.

Michael: Yes. There's weird money stuff. Two employees sue because they say that Patterson made them show their nipples to Koko and they started to feel really uncomfortable. Apparently, according to the lawsuit, "Patterson once said, "Koko,

you see my nipples all the time. You're probably bored with my nipples, you need to see new nipples. I will turn my back so Kendra can show you her nipples.'"

Sarah: So, is this becoming that Koko wasn't actually asking for nipples? Koko was the *excuse* to ask people to show their nipples?

Michael: I think it's more emblematic of the refusal to place any boundaries.

Sarah: Right. So you think it's just like, Penny's devotion is arguably manifesting in her treating Koko like another human.

Michael: Yeah!

Sarah: It's really nice you felt like you took these sacred vows to give your whole life to Koko but maybe Koko would do better if you gave less of your life to her.

Michael: Yeah! One of the things that's actually really fascinating to me, and I think this is an archetype we haven't run into in our show all that much, is that Penny Patterson is very obviously a good person, or thinks of herself as a good person--

Sarah: Or is trying to be a good person.

Michael: Yes! One of the aspects of her that doesn't get a lot of attention is that she's a devout Christian.

Sarah: I--yeah, I've never heard that before and I've been hearing about Koko and Penny since I was a little kid.

Michael: I mean, she talks about in the first years of training Koko she would fog her breath on a window pane and draw an angel in it.

Sarah: Hmm...

Michael: Then she would try to get Koko to draw it, then would try to get her to sign ANGEL. Part of her project has always been to prove that gorillas have a soul.

Sarah: Wow...

Michael: It's also interesting that, over time, that drive has pushed her to an, "the ends justify the means" kind of thing. So, throughout the time she's with Koko, there's this very background rumor that apparently the San Francisco Zoo asked for Koko back. Depending on which version of this rumor you believe, Penny either

flat out refused to give Koko back to the zoo or she raised enough money through fundraising to buy Koko from the zoo. It seems like nobody really wanted to have a big public legal battle about this so they thought it was better to just leave Koko with her.

Sarah: I can't believe we're talking about gorilla legal battles!

Michael: I know *chuckles*

Sarah: I guess this was inevitable that we would get here. Go on.

Michael: And then...Michael, this gorilla she brings in to try and impregnate Koko, was actually captured from the wild. The story that Penny tells in the book is that his parents were eaten by Natives in Cameroon. People in that part of the world do actually eat gorillas so that's somewhat plausible. Other people that know more about the dynamics of international trade of gorillas have said that usually means his parents were poached, he was kidnapped and then sold.

Sarah: Right. Right...

Michael: I mean, she admits in her book she bought Michael from some random guy. Someone she met through Barbet Schroeder, the film director, for \$28,000.

Sarah: Wow! She went to go see a man about a gorilla.

Michael: Yes! So, again, she wants to impregnate Koko. This has been her life's mission. There's this documentary that the BBC did in 2015 where Penny talks about Koko's inability to have a child. She breaks down crying talking about this. It's really moving. It's clear that she sees this as her failure. Koko's sadness is her sadness and that is, in some ways, very sweet. Also, that can drive you to this obsession where you forget what the actual purpose of this is.

Sarah: *vocalizing agreeance*

Michael: I keep thinking about these moments she talks about as evidence Koko's knows sign language. When she said, "Oh, driving to LA is gonna kill me," and Koko runs over and signs FROWN FROWN FROWN. In a way, you don't really need Koko to sign FROWN FROWN FROWN for that to be a touching story. It's clear that Koko is picking up on something.

Sarah: Right! Maybe it's that Koko is noticing your emotions and what you're putting out emotionally! Animals are, generally, much better at that than we are. She's

communicating with you on a different level than what you're trying to teach her. It's still real and it's still happening.

Michael: Yes! Right! You don't necessarily need to put it in this frame of, "Look! She has grammar and syntax and she's pluralizing words!" Maybe she's just intuiting something and she's expressing it to you but we're not necessarily tuned-in to the way she's doing that. So, you know, she set out to *prove* that gorillas have a soul and I think she did.

Sarah: Yeah! Y-Yes.

Michael: But not in the way that she wanted to.

Michael: I mean, she certainly made a generation of children love gorillas.

Michael: I mean, that's a start.

Sarah: I do think there's also something to the idea that when she started working with Koko people thought gorillas wouldn't take to language. I guess that was true in the end, but that they wouldn't because they were inferior to the other apes, or something like that. I think that what all these children grew up with as a truth, that is still a truth, is, "Here's Koko! She's a lovely gorilla. She's best friends with this lady. She wanted a baby, she got a kitten, she loved her kitten, she lost her kitten and she was sad." I think that all remains true if she's not communicating with signs.

Michael: Right. She's still telling us that. She's not necessarily telling us in the language that we taught her, or claimed to have taught her. But it's there if we want to listen.

Sarah: This actually reminds me of the famous "miracle worker" moment of Helen Keller feeling the water on her hand and saying, "water" or saying, "wah." That didn't happen.

Michael: Oh!

Sarah: She wasn't verbalizing at all. They weren't working on that yet. Anne Sullivan was like, "Okay, this child is Deaf-blind. I'm going to fingerspell everything into her hand." The waterpump moment was her realizing the word being spelled into her hand means the thing she's feeling. There's no verbal language involved at that point. She's not there yet. Which is very interesting, right? We rewrote that to privilege the kind of communication that is meaningful to us. The moment of

realization still happened, it's just a little bit different than the version that was made palatable for the public.

Michael: Mmm! Well, that's lovely! That's like a little bonus *You're Wrong About*.

Sarah: Thanks.

Michael: *chuckles* So, June 19th, 2018, Koko is 46 and she passes away in her sleep. The average gorilla in the wild lives to about 30 years. They tend to live much longer in captivity. Marcus, the researcher I interviewed, said there's no way to look at Koko or these kinds of studies without anything other than sadness. Like, the existence of her: born in captivity, spent her whole life in captivity, it's not clear she knew she was a gorilla. Her whole life she was socializing with humans. There's no way to look at it than anything other than a tragedy. Her existence is a tragedy. Even if the abuse that she suffered wasn't as bad as Nim--

Sarah: But captivity is a form of abuse--

Michael: Yeah!

Sarah: --and lack of other gorillas is a form of abuse.

Michael: The whole debate in the 1970s and early 1980s was: Can an ape learn sign language? But was that ever the right question to ask? I think about if I'm kidnapped and taken to an alien planet. They teach me to speak their clapping slapping my body language or whatever weird, eight arm, alien language they have--

Sarah: Yeah. I like picturing you clapping as fast as you can to try and get an earthling biscuit.

Michael: *laughs* But, like, it's an interesting parlor trick but that's not teaching them anything about humans.

Sarah: Yeah, you're on this planet and you're clapping to get crackers! They're like, "Look! This human can write clap poetry!" You clap a bunch and they're like, "Wow! So beautiful!"

Michael: Right!

Sarah: And you're like, "I just want a cracker!" you know? Take me back to my planet.

Michael: *laughs* Exactly! Right. It's not telling you anything about the ability of apes to engage in higher order cognition because our only way of tapping into that is to translate it into a language we understand. It's the wrong medium to be figuring out the kind of thought they're capable of.

Sarah: I know that all of our episodes are depressing but...This one is depressing in a different way. It's more painful because I have less of a callus on it.

Michael: Yeah.

Sarah: Yeah...How would you describe this modality of painfulness, Mike?

Michael: I mean, I'm going to end with a really dark Kafka quote--

Sarah: [unenthusiastically] Yay...

Michael: Kafka wrote a short story, *A Report to an Academy*, about an ape that learns to really speak. This is an excerpt from the Harper's article:

"In recounting why he had learned to talk, the ape explains to his fellow members of the academy: ...there was no attraction for me in imitating human beings; I imitated them because I needed a way out, and for no other reason. And so I learned things, gentlemen. Ah, one learns when one needs a way out; one learns at all costs."

Sarah: Mmm..

Michael: I really liked this quote I found from one of the chimp trainers at the Cincinnati Zoo. She says,

"Gorillas are not lesser humans, they are perfect gorillas. They evolved into what they are for a reason."

Sarah: Yeah! I think the lesson here is that humans project our own priorities and ideas on to everyone and everything. On to other humans, animals, nature itself. Yeah, Koko was a perfect gorilla.

Michael: Yeah.

Sarah: In conclusion, education is a tool of the oppressors. There ya go.

[LAUGHTER]

Sarah: I mean, in the ways we teach and are informed by what kinds of intelligence we find valuable.

Michael: Right!

Sarah: That's visible on every level.

Michael: It's also parallel to Deaf people. For a hundred years we're like, "No, no. You need to learn to communicate in this other way. You need to communicate in this way that isn't suited to you but we're going to make you do it anyway."

Sarah: It's interesting that we became enthusiastic as Americans about ASL in the process of teaching it to a population that couldn't benefit from it. When [Deaf] people were saying, "We would like to communicate in a way that's useful to us," we were like, "Absolutely not. We're going to force someone else to do it rather than doing the thing that's useful for them. It's only worth teaching to someone if it's painful for them."

Michael: Right! We wouldn't recognize it for the people that *want* to be speaking it. We only want to impose it upon, what we believed to be, this other spectrum of humanity.

Sarah: Why value a means of communication if you can't force it on people, ya know?

Michael: *chuckles* Yeah. So, yeah, that's it.

Sarah: Wow, Mike! That was really a bummer! Thanks!

Michael: It's a bummer. But we didn't cancel Koko. You can keep Koko.

Sarah: And throw out everyone else!

[LAUGHTER]

[THEME SONG FADES IN]

Michael: [fading out] Koko's the only one that isn't canceled, yeah...

[THEME SONG FADES OUT]