

# Delphinology Part 1 with Dr. Justin Gregg

## Ologies Podcast

April 19, 2023

Oh hey, it's the extra power bank you always forget to charge and bring with you, Alie Ward, and this is an *Ologies* that you did not know you were waiting for. Oh, dolphins. No one's ready for this; *no one* is. Y'all know we've had a few two-parters recently and I just can't help it, we've done it again. This conversation was just too perfect and too long not to break up because, honestly, it's one that you need to savor. I legit like this ologist more than I'm ever going to like myself and I'm so thrilled to introduce them to you.

They got their PhD from the School of Psychology at Trinity College Dublin in Dublin, Ireland. They are currently an adjunct professor at St. Francis Xavier University and a Senior Research Associate with the Dolphin Communication Project. Also, co-editor at one point of the journal, *Aquatic Mammals*, so they know their stuff. They also wrote the book on dolphin cognition called *Are Dolphins Really Smart?* As well as the book *22 Fantastical Facts About Dolphins*, and they just came out with another book on animal cognition titled *If Nietzsche Were A Narwhal: What Animal Intelligence Reveals About Human Stupidity*. And this ologist sat down in Nova Scotia for a spirited and – no hyperbole – a thrilling discussion on everything from dolphins on acid, to why *Hustler* broke dolphins' biggest scientific study news.

But before we do, a quick thanks to all the patrons at Patreon.com for keeping the show going and submitting great questions, you too can join for as little as a dollar a month. Thank you also to everyone for rating, subscribing, and reviewing, which keeps us up in the charts. This week we were #1 in Science, which really means the world to me. I read all the reviews and I prove it with a piping hot one. This week is from AdieTron who wrote:

*Alie is basically your college roommate: She throws great parties with interesting people, and you definitely wouldn't have passed your Bio classes without her tutelage. She definitely eats all your snacks, tho.*

AdieTron: nailed it. Also, if you hear this before April 20th, *Ologies* is up for a few Webby Awards, including Best Host and my competition is, like, some loser named John Stewart. The link to vote is in the show notes but I'm keeping my expectations low.

Okay, dolphins. First off, the term delphinology comes from the Greek meaning 'fish with a womb' so... process that. Also, in French, *dauphin* means 'prince' and I spent way too long pouring through some old papers about European noblemen. But essentially, the French call their princes dolphins because of some Count of Vienna who called his son that as a nickname in the year 1110. Despite Vienna being 500km away from the Mediterranean, but yes, there are dolphins in the Mediterranean. Anyway, it's time. (Just a quick heads up, up top, there is a brief mention of suicide in this episode, just letting you know.)

Let's get into this episode, let's slide our slippery little butts into these fascinating waters for dolphin brain size, language, squeaks, calls, why they follow boats, pink dolphins, the difference between a whale and a porpoise and a dolphin, dolphins in the deep, dolphins in captivity, the word captivity, the godfather of dolphin mystique, why NASA invested in dolphin research, and love, physical love between a dolphin and its keeper, so much more with researcher, author, and delphinologist, Dr. Justin Gregg.

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**Justin:** My name is Justin Gregg, he/him.

**Alie:** Well first, let's address the ology. Cetology? What would the ology be for dolphin?

**Justin:** I don't know if there's a word specific to dolphins. Delphinologist or maybe... A cetologist is a thing but that's also, like, whales.

**Alie:** Yeah, that's all kinds of stuff, right?

**Justin:** Yeah, whales, dolphins, and porpoises. So, I don't know as much about baleen whales or even toothed whales. I'm just sort of the dolphin guy.

**Alie:** When you say you're the dolphin guy, I mean, so exciting. How many dolphin people are there who are in the community of dolphin researchers? Because I feel like there's probably a lot of people that are like, "I need to know what's going on with dolphins as a job."

**Justin:** There are a lot and they come from completely different fields. There are a lot of psychologists, zoologists, there are biologists, anatomy people; they're coming at it from so many different angles so it's even hard to say how many there are. If you go to a conference on marine mammalogy, there will be hundreds and hundreds of dolphin people but they're not even in the same domain. They're like, "this one guy knows everything about hydrodynamics," and then I'm there I'm like, "I do dolphin squeaks" or whatever, [Alie laughs] and we're not on the same planet. So, I do need to know basic dolphin anatomy stuff, right?

**Alie:** Why do you think dolphins are so interesting to humans? Is it because they have giant, huge brains?

**Justin:** That is the greatest question. I mean, people will look at the history, they'll be like, the Greeks had a thing with dolphins, they thought of them as friendly. And in Western Europe yeah, there's kind of this weird mythos around dolphins being important to our cultures. But the reason that you and I know a lot about dolphins and feel like they're a big deal is really because of what happened in the 1960s [Alie gasps] with the crazy pants experiments with dolphins that led to all... Like everything we're going to talk about that's flimflam, I swear came out of the early 1960s. It's still floating around after like, 70 years. ["Very groovy."]

**Alie:** What happened in the 1960s? Was there some sort of post-atomic, space race, LSD, "now we have to figure out everything about dolphins, everyone's horny."? What was going on?

**Justin:** It was specifically one person, which was John Cunningham Lilly; John C Lilly. And like, his story explains *everything*. And he is... like, I do not want to disparage him because he is the reason most of us dolphin nerds got into it, because a lot of his ideas became things that we then wanted to learn about and address. But also, he went totally off the rails with his speculation, which is why there is so much crazy stuff happening.

**Alie:** How did you find out about that research? Let's get into how *you* got into it, and then you're going to take me back and I'm going to hear about this Lilly-pants person because I'm fascinated.

**Justin:** It's an amazing story, I love telling it. But yes, so me. Okay. So, I wanted to do undergrad stuff and I didn't know what I wanted to do. I'm one of those people who entered and was like, "I'll take the first two years to figure myself out." And there's two things I knew. One, I sucked at science. Two, I sucked at math. So, I was like, "Okay, what I'm going to study is linguistics because I really love languages, I love learning languages, learning how other people learn languages." Languages became my thing. So, I did an undergrad degree in that, didn't study anything with dolphins whatsoever. And that was great, an undergrad degree in a humanities field, so that went nowhere. ["Ouch."] [Alie laughs]

So, then I immediately started working... like, I retrained to be a sound engineer. I did a course because I thought I was going to be a studio engineer that records bands. And I was in Ireland recording terrible boy bands and I'm like, "This is the worst career." So, I immediately stopped that. *[laughs]* Then I decided to be a voiceover artist for cartoons and films, and I did that for a bit. And then my wife was starting her PhD and so then I had to work all these jobs to support her, and they were, like, temp jobs. The worst jobs you could imagine.

**Alie:** Ohh, like what? How bad?

**Justin:** Like, I had a zipper counting job where there's a warehouse filled with clothing items, like, you would send out... like a haberdashery and I just had to do an inventory on all the zippers. *[Alie laughs]* It was like, just thousands of bins of zippers and I'd be like, "There's 73 red, 3cm long zippers in this bin." *[laughs]* And that's what I did for a living.

**Alie:** *[laughs]* Oh my god, I worked in college at a fish lure place and I had to count fish lures.

**Justin:** It's awful!

**Alie:** It's a living. It was April 1st, and I called my mom to tell her that I was dropping out of school because I'd been offered a promotion at the fish lure place. And she was like, "Please don't. You're a semester away from graduating." And I was like, "Mom, it's \$4 more an hour." So, I've been there. I've been there.

**Aside:** This next part seems like a scene from a stoner movie, and by that, I mean, it's the best.

**Justin:** And one of the jobs I had right at the end was I was working in a bank doing, like, car insurance customer service. And I had a computer with a screen on it with a dolphin screensaver, like one of those cheesy dolphin screensavers and I was staring at it all day. *[Alie gasps]* And I'm like, "Why... My life is terrible, this is ridiculous. What do I want to do with my life? I want to be studying that animal that I loved as a kid." And so, I'm like, "How do I make that happen?" Because I have a degree in linguistics; that's a human thing. And I'm like, "You know what? I can study dolphin communication; I can study the evolution of language by looking at another species that's famous for being good at communicating."

And so, I went to the public library and I just read a ton of books on biology and things I didn't know about and got good enough to apply for a graduate program. Got in, and then boom, there you go.

**Alie:** Wow.

**Justin:** So, that's what happened to me.

**Alie:** *[gasps]* And how much did you have to catch up on the evolution of cetology and things like that? How many basics did you need to know biologically to understand what they were doing with their brains and communication?

**Justin:** A lot. I ended up doing a lot of reading and then while I was doing my master's and PhD, just taking a ton of classes in zoology, biology, anatomy, and psychology just to have a basic grasp of what brains do. Because again, I studied nothing of the sort. I had like a Folk and Square-Dancing class as an undergrad. *[Alie laughs]* I didn't know what I was doing. But I was motivated and passionate because I'm like, "I'm not going to work at this terrible job, I'm not counting zippers, I'm not counting lures, I'm studying dolphins." So that did it.

**Alie:** Wow, okay.

**Aside:** The big question.

**Alie:** Do dolphins talk? What is talking and are they doing it?

**Justin:** The problem is, as always: What does talk mean? What does language mean? If we're just chatting and we talk about, "Oh, dolphin language, what's that like?" You're sort of using it to mean *their* communication system and that's okay. But if I put on my science guy hat and I'm like, "No, that is not language." Language has a very specific definition of what it's doing and how it functions structurally, and that is not something that even the best symbol-using species like animals like the great apes and dolphins that we can train to use symbols, they aren't doing full-fledged language. Even in their own communication systems, they're not talking about, as it were, the same kinds of things that we are.

I think the best way to understand why it's not, is that if you look at animal communication systems, what is it that they do communicate about? It's like a handful of things. They say, "There's danger," or "Come mate with me," or "There's food." And that's kind of it. Whereas you and I can talk about how terrible it is to count fishing lures. Anything that we can conceive of, we can discuss; it's open-ended in terms of the concepts that we can discuss. And animals just don't. Even though they have structurally complex systems, they don't talk about lots of things.

**Aside:** So, there's a difference between communication and language. Communication just relates any information; that can be a grunt, or a look, or a scream. And we have a whole episode just on screaming; I'll link it in the show notes. But language on the other hand, or tongue, can be verbal, it can be signed, it can be written, but it has to have a system of vocabulary and of grammar. And I will also link the Phonology episodes on human linguistics. But getting back to the subject at hand... or at flipper, delphinology.

**Alie:** Okay. When you were learning about dolphin communication and dolphins and you were taking zoology and biology, and all of these things, how much did they talk about this Lilly guy?

**Justin:** Not too terribly much because I think that he's sort of a taboo character in that... So like, if you're a serious dolphin scientist person, you will know about him and his influence on the field, but you're not referencing his writing. So, we didn't talk about him much, you sort of have to learn about him through the lore of people who don't study dolphins coming and asking you like, "Hey, is it true that dolphins are psychic?" or whatever, and you're like, "What?" Then you have to go and be like, "Where are you getting this from?" And the answer is always John Lilly.

**Alie:** Oh my god, can you give me a rundown on who he was and why he made dolphins so dolphin-y in our culture?

**Justin:** Yes. So, [*Story time.*] he was a medical doctor, he studied neuro stuff and there was like, one day his friend invited him down to the beach where there was a dolphin or a pilot whale I think that had died and he's like, "You've got to check out this animal's brain," and cracked open the skull looked at the brain and they were like, "Woah, it's big."

And that was, strangely, the first time anyone had ever really figured this out. This was in the late '40s and before then, dolphins were like weird fish; they're fish that breathe through a hole in the top and then they give live birth, so they're a mammal, we knew that. But there were no ideas about them being smart. This didn't exist until he looked at the brain and was like, "It's big." [*Alie laughs*] And then he's like, "Okay." He used to do vivisections, so he'd put electrodes in the brains of monkeys and great apes and stimulate the brain and see what the brain was doing. This was early days. And he's like, "I'm going to do that to dolphins." [*Well, okay... Okay.*]

And so, he went to a lab in Florida, got access to a bunch of dolphins, anesthetized them, and tried to stimulate their brain. But the problem is, when you anesthetize a dolphin, it dies [*Fuck*]

because they're conscious breathers; if they go to sleep, they stop breathing. So, he killed a ton of dolphins...

**Alie:** Oh fuck.

**Justin:** ... and then he finally figured out how to not kill them and stimulate their brains. And what he noticed was that they made a lot of noise, they made a lot of clicky sounds, and sometimes it sounded like they were trying to imitate his speech. [*series of loud dolphin clicks*] And so, that was the eureka moment, he's like, "They're trying to speak English."

And so, he wrote like a book about those early experiments, *Man and Dolphin*, and he was sure, because of the size of their brain and the fact that they could imitate his speech or were trying to, dolphins had a language, dolphins were smart, or smarter than humans because their brains are larger than ours. And he just had these big, grandiose ideas about, like, someday in the future, we'll have the dolphins at the United Nations table, and they'll be there with us talking about... And then the money started coming in. [*"Cha-ching. Cha-ching."*] Then like, NASA was interested, because they're like... [*both laugh*] The government was like, "Oh, they might be that smart? Here's tons of money, go learn to talk to the dolphins."

**Alie:** Oh boy.

**Justin:** So, he started... Oh my, I'm just going to go- This is a monologue and a half.

**Alie:** I love it, I love it.

**Justin:** He started a lab in St. Thomas where he was studying dolphins to communicate with them. Famously, there was a woman named Margaret Howe who was part of his research group, and she lived in a house, a two-story house, flooded with water, [*Alie gasps*] that a single dolphin lived in named Peter.

**Alie:** No.

**Justin:** And she lived in the house with Peter to teach him English.

**Alie:** Wait.

**Justin:** This is a lot, I know.

**Alie:** No, no, no, no. It's not even enough, is what it is. [*Justin laughs*]

**Aside:** This gets so much weirder. Hang tight.

**Alie:** Okay, one question, do you think that the dolphin at any point was trying to speak human to be like, "Can you please not?"

**Justin:** No.

**Alie:** Okay, just checking.

**Justin:** Yeah, I would say not the case, no. However, when the dolphin with Margaret got in the pool, she was actively teaching it to imitate her. And it *was* trying to imitate her because they're very good mimics, vocally. But it sounded... Like, you can listen to the recordings, it sounds ridiculous. They're not structurally capable of making human-like sounds. [*Margaret says, "Hello," followed by dolphin screams with the inflection of two syllables.*] So, she spent like 6 months yelling numbers and words at this dolphin and trying to get it to imitate her speech and it didn't work.

**Alie:** Was she in scuba gear? How was she going up and down this two-story watertight house?

**Justin:** I guess it was a weird elevator thing that would bring her up and down and like, her desk was elevated from the ceiling, and she would just sort of sit there, put her feet in the water, and the dolphin would come up to her.

**Aside:** So, this dolphinarium was situated on the Caribbean Island of St. Thomas, and Margaret Lovatt, sidenote, had heard about this secret lab while she was living on the island. She drove to the lab where she encountered the lead scientist on the project outside smoking a cig and she was like, “Hey, I’m no scientist but can I science with your dolphins”? And they were like, “Such moxie, get in the tank.” And so, she turned out to be a really gifted and astute animal observer. So, when she pointed out that going home and sleeping in a dry bed with your partner meant losing 16 hours of potential observation and data every day, they were like, “Good point.” They water-proofed the lab’s upper floors too.

She moved in for a total of 6 months. And the photos I saw looked kind of like an indoor swimming pool but just wall-to-wall and usually with Margaret Lovatt with a golden tan, a dark pixie cut, and full lips, dangling her feet in the water, or bent over a bucket of fish, eyes trained on a dolphin.

**Alie:** Wow, okay.

**Justin:** She slept there.

**Alie:** She slept in the house with Peter the dolphin. Now, when I hear the words, ‘Peter the dolphin’, something in my brain says, “Alie, you’ve read about this and it’s horny.” Am I wrong?

**Justin:** You are not wrong. You are getting into the part of the story where it goes off the rails.

**Alie:** Oh no!

**Justin:** Yeah. So, famously, because this appeared– The first people to break the story was *Hustler* in the ‘70s.

**Alie:** No.

**Justin:** Yeah. [laughs]

**Alie:** Oh my gosh.

**Justin:** And then it became a famous story. So, Peter the Dolphin was a young dolphin, a young male dolphin taken from his social group. Normally, he’d be hanging around with a bunch of other dolphins, doing normal dolphin, socio-sexual stuff. So he, and I’m sure we’re going to talk a lot about this in the future, he would whip that penis out because dolphins can do that all the time and sort of be rubbing it on her. And so, one of the things she would do to calm him down to get him ready for more experiments would be to bring him to climax.

**Alie:** Oh no.

**Justin:** So that he would chill out. [“Oh dear.”] Yeah. And so, as she’s describing it, it’s not weird. Like, if you would listen to her accounts, she’s like, “Look, it just had to happen, it wasn’t as weird as people make it out to be.” But once people caught wind of the fact that there was someone masturbating a dolphin for science, the money stopped coming in, [laughs] right?

**Alie:** Oh noooo.

**Justin:** [through laughter] I’m sorry.

**Alie:** Peter’s like, “This experiment is working for me.”

**Justin:** He was okay, yeah. No, he was probably miserable.

**Alie:** Yeah, absolutely.

**Justin:** Yeah.

**Alie:** I don't want to live in a two-story house with anyone hanging from a desk. Take me back to my friends where I can be horny with them without cameras and clipboards. So, how long did these experiments with Peter go on?

**Justin:** Only about a few months, I can't remember, 5 or 6 months maybe. And then the money dried up, really did. They stopped funding it and he ended up dying.

**Alie:** [*gasps*] No! What happened? How? Why?

**Justin:** Well, that's another one of these stories which is famously... John Lilly called up Margaret and said that "Peter has committed suicide. He's so sad that he stopped breathing and went underwater and just asphyxiated," he had told her. So, this concept of 'dolphins can commit suicide' became another one of these things that people still ask today, in 2023, "Is that a thing?" And it really was just based on that moment going forward.

**Alie:** Do you think that that happens ever in the wild?

**Justin:** I don't. Because for suicide, you have to have this concept of your own mortality and the nature of death. I think you did something on Thanatology and whether or not animals do understand death, and they do to some extent but certainly probably not in a sophisticated enough way to say that they would know what suicide was.

So, you certainly have animals that are sad and stop eating and die; that's a thing that happens to a lot of animals. So, that's not out of the question. But whether or not it was intentional... I don't think so.

**Aside:** Peter the Dolphin, as well as a few others at the dolphinarium, had been captured in the wild previously and used in the TV show *Flipper*. And another actress and dolphin from *Flipper*, a dolphin named Kathy, apparently ended her own life after the show wrapped, just one day failing to breathe in the arms of her trainer. And another captive orca died of self-inflicted blunt force trauma, butting into a wall headfirst repeatedly.

But animal behaviorists are still split on cetaceans' intentions in self-harm. And one not-so-fun fact, but suicidology is a legit field in mental healthcare and in research, and I have a future episode on that planned. But overall, those ologists have moved toward saying, "Died by suicide," rather than "Commit" since the language of commit implies an act of wrongdoing or something to be judged. But yes, stay tuned for that episode.

**Alie:** What about the notion of dolphins as people? Did these experiments pave the way for that?

**Justin:** Yes, because the claims were quite strong in that their intelligence levels are the same or more sophisticated than us, and that bleeds straight into an argument of "Well, if they're super, super smart then they should be allotted the same moral consideration as other humans." And so, yeah, they entered into the lore as a creature that deserves rights along those lines.

But-but-but now we get into the modern day, and we talk about personhood in the legal sense, which a lot of folks are doing when it comes to cognition. And that's a different kind of legal question where you could say an elephant, or a chimpanzee, or a dolphin has enough sophisticated cognitive function to be considered not a thing but a person, just like McDonald's is a person because corporations have personhood, so why not a dolphin? Which isn't so crazy.

**Aside:** Yeah, and while corporations have enjoyed some of the legal rights of people since the 1918 court case involving Dartmouth and England, the courts are still on the fence about captive

animals. They're arguing, what exactly *Habeas corpus*, or the protection against unlawful detention and the right to bodily autonomy really means for different species.

**Alie:** Do you– And I'm not sure exactly what rights personhood allows because there are still scientific experiments happening with dolphins, correct, without their consent? As well as abduction from the wild. But where is the line between respecting the intelligence and the cognition of a dolphin versus wanting to know more about the cognition for the benefit of humanity? Where, ethically, do scientists draw that line?

**Justin:** That is a great question and there is no answer because the folks who are advocating are fighting for personhood to be applied. But that doesn't necessarily give an animal, in this case, exactly the same rights as a full-fledged adult human. Because if you think of children, children are humans, they have personhood as well, but we're allowed to do things to kids that you can't to an adult. I can take my toddler and put her in the car and strap her down against her will. She's like, "I don't want this!" and I'm like, "You have to put on a seatbelt." That's allowed, but I could not do that to you; if you're yelling at me not to put you in the backseat, that's not allowed. So, even within our own species, there's gradients about what is and what isn't allowed based on the situation. So, certainly that would apply to... You would have justifications for doing some things to animals and not others if they had personhood.

**Alie:** Well, talking about their personhood, and their brains, and all of this, how did dolphins, which from what I understand evolved out of the ocean onto the land, became deer-like creatures, and then were like, "Fuck this," went back to the ocean. How did their brains get so big and squishy along the way?

**Justin:** That is the million-dollar question. They have very large brains, sophisticated brains in that they have a lot of cerebral cortex that's all folded up just like humans, more folds than humans even. And the question is, well why? Why do they need it? And there are a lot of competing hypotheses and no answers. Some major hypotheses are that it is diet related. They are omnivores... not omnivores but they are hunting and looking for food in the same way a crow might do or a human, and so they need... Because of the ecological needs of being a smart hunter, their brains got big. That's potentially an answer.

But the more interesting answer is that it's for social navigation because dolphins live in exceedingly complicated social groups and the need to navigate those social groups necessitates a lot of brain power to keep track of who your friends and enemies are. Who do you hate? Who helped you last year? [*"I'm not going to make a big deal at my party, but she was so rude."*] And so, that is the leading hypothesis, which is probably still wrong, but it's a really good one.

**Aside:** And I'm sure there's a spectrum of well-being for marine mammals that are human-kept. On one end, being well cared for, or research animals that are minimally disturbed in larger natural habitats. And then on the other, whales kept in oversized swimming pools and forced to perform for screaming children.

**Justin:** Certainly, on the face of it, if you take a very social mammal living in a large social group, or like orcas in a family pod, and you separate them, you would assume that they aren't having a lot of fun in that scenario. That's probably true although it's very species-specific, and probably very individual dolphin specific, and also really hard to measure. If you think, you know common bottlenose dolphins, they live way out, the pelagic species, they live out in the middle of nowhere. If you take one of those and you put it in captivity, it dies instantly.

**Alie:** Aww.



**Justin:** Because it cannot handle whatever the captivity constraints are. But a bottlenose dolphin, pretty resilient species, gets along really well with humans, can handle new social groupings okay. They're probably not as freaked out as other species would be.

**Alie:** Researchers do keep dolphins in captivity to study them, right? Do you have any idea, how do they make sure that the dolphins are okay that they're studying them, but they're not in distress?

**Justin:** Yeah, people who study them, and these days it's a lot better than it used to be, and some facilities are way better at this than others, they will have veterinarians and research teams whose whole job it is to monitor their levels of hormones, stress hormones, and things just to make sure they're okay. And then you have behavior experts who are there with the dolphins all the time just to monitor their behavior. But of course, that's always the controversy like, "Okay, but you don't really know what the dolphin is experiencing consciously. How does it actually feel?" So, it's hard to know for sure, so you're making a best guess.

If a dolphin is listless and not eating, then probably sad. If they're running around, swimming around, playing, and happy looking, making a lot of sounds, they're probably okay. But who knows for sure?

And again, how do you measure it? Within the science of it, you just have two camps. There's people who are like, "Captivity is the worst and let me show you all the ways," and then there are people who are like, "It's not that bad, check these experiments out to show you." So, there's no consensus.

**Aside:** So, there was a series of papers on cetacean welfare in professionally managed programs, and it was published in 2021, and it was about enrichment, habitat use, and cortisol levels. But it was conducted by and partnered with 43 different zoos and aquaria who tend to land on the "captivity is fine" side of the aisle, despite the backlash that has erupted in the decade since the documentary *Black Fish* gave people the big ick about SeaWorld. But if you're, say, cruising in the wild, how many dolphins are out there?

**Alie:** What about species of dolphins? How many dolphins are out there?

**Justin:** Nobody knows.

**Alie:** Okay.

**Justin:** [*both laugh*] It's about, somewhere between 38 and 42. Scientists fight about that too. I love reading the literature where they're just yelling at each other about like, "This ecotype is technically a new species blah blah," and they're just fighting. So, I'm going to say 40-ish.

**Alie:** Okay.

**Aside:** 40 species! Just to clarify once again, dolphins, they're not fish, they're mammals. So evolutionarily, mammals evolved from aquatic creatures that had come out of the water to live on land. But 50 million years ago, some of those related to deer decided, "Fuck this." They started splashing around in the water again and eventually they evolved back into sea creatures. Their closest living relatives... Hippopotamuses. What?! And dolphins have leftover pelvis nubbins where hind legs once were.

Also, dolphins are not porpoises; I did not know this. Porpoises have less of a snout and more of a cone-shaped face and they have a triangular dorsal fin instead of hooked. Porpoises also tend to be in cooler waters while dolphins prefer more temperate oceans. But they're all in the oceans, right?

**Alie:** What about the pink ones? Why are some of them pink?

**Justin:** Yeah, well there's the pink river dolphin.

**Alie:** Freshwater?

**Justin:** Yes, they live in the Amazon. And so, there are a few species – there’s a handful, six or seven – that live in freshwater. They’re always the most screwed because they live close to people. But the pink ones, they start out gray, this is the weird thing about river dolphins, and then they get all that pink skin from, like, chewing on each other. So, there’s just a lot of scar tissue and things, I think, is the main reason for the pinkness... which is weird.

**Alie:** [*softly*] Noooo.

**Justin:** Yeah. That’s my understanding of how Amazon river dolphins get kind of pink.

**Alie:** Wow. Like hockey players. Why are they doing that to each other?

**Justin:** Well, I always say this: They’re similar to people and this is the reason we love them, and are freaked out by them, and have strong opinions about them. Because they fight for their... Anything having to do... Why do people fight each other? I don’t know. Why do my neighbor and I not get along sometimes? Stupid reasons. Complicated social species often fight about stuff. I mean, there are reasons related to mating and other things, but for the most part, they’re just... they can get grumpy.

**Alie:** Wow. Can you imagine just your whole look is defined on how much bickering you’ve done?  
[*laughs*]

**Justin:** It’s like an MMA fighter. Or a wrestler who’s got cauliflower ear, you can tell, “This person gets in a ton of fights.”

**Alie:** Can you imagine if they’re like, “This species of Alie Ward has very patchy hair,” and it’s just because people keep pulling it out because I’m just a bitch. [*laughs*] I just keep getting in bar fights.

**Justin:** It’s true. I mean almost all species, they’re covered in something called rake marks, which is when a dolphin bites another dolphin and drags its teeth across it. They don’t scar up very deeply, but they’ll last for maybe a year. And so, like, any species that you see is just covered in rake marks. Risso’s dolphins, I don’t know if you’ve ever seen these, they’re kind of big, they got a blunt head, and they are like this patchwork gray, and they are just covered at all times in rake marks; they’re just biting each other incessantly. It would be like you and all of your friends just had your hair ripped out all the time.

**Alie:** So feisty. I guess they do that instead of having City Council meetings where everyone is yelling, which is another way to live. But what is their skin like? Have you ever touched dolphin skin?

**Justin:** I have touched a lot of dead dolphin skin and a living dolphin skin maybe once, and it is not like a weird rubber tire which it looks like, it’s actually kind of warm and nice and smooth.

**Alie:** It’s warm!

**Justin:** Yes, they’re warm. It’s nice. [*laughs*] It’s lovely to touch, actually. It’s not clammy and cold like a piece of rubber.

**Aside:** If you put my hand on a religious text and forced me to guess the body temperature of a dolphin I would be like, “65°?” Like, whatever the temperature of a wet rag is. Incorrect. So, I looked this up in a paper titled, “Thermal tolerance in bottlenose dolphins,” which measured it at a depth of 25 centimeters rectally (that’s 9 to 10 inches up the butt of a dolphin.) And it turns out that dolphin body temperature is 36 to 37°C. And Americans, I got you, that is 96.8 to 98.6°F, also known as your body temperature right now. So, dolphins are out there skinny dipping through ocean tides with the same damn temperature as us, thanks to some blubber.

But given that they're the same temperature as us and they have brains like ours, but larger, I wondered, does heat have anything to do with cephalization rates? Are bigger brains hotter? And I happened upon the 2021 study, "Amplification of potential thermogenic mechanisms in cetacean brains compared to artiodactyl brains," AKA hoofed ungulates, from which they evolved. So, this study said that because dolphin brains have much smaller prefrontal cortices than humans and hippocampal regions, all that extra brain matter might not be going toward cognition but just keeping its noggin warm. And that their data supports, "the thermogenesis hypothesis of cetacean brain evolution and function." [*gasps*] Rude but interesting.

**Justin:** Yeah, and their skin is very similar to ours. In terms of all the receptors it has on it for light touch, whatever, it's very, *very* sensitive, they have very sensitive skin. And especially around the blowhole, where they need to go up to the surface to breathe, because then they know when they've pierced through the water, and they can sense the air. It's very similar in a way to ours.

**Aside:** More on sensitive blowholes later.

**Alie:** How long can they stay underwater and surface? And they have to think to breathe?

**Justin:** Yes, they are conscious breathers. So, you and I, as we're talking, our breathing is happening subconsciously, part of our brain handles it; when we go to sleep, we're breathing. Dolphins do not have that, they are literally consciously saying, "Okay, breathe now." They do not have the ability to turn it off and just have it happen automatically, which makes sense because most of the time they're underwater so if their brain was like, "Hey, I'm going to take a breath now," they'd be like, "Oh, no no!" And then they'd just drown. So, thankfully they have voluntary control over it and dolphin species don't hold their breath all that long. There are some human divers, like free divers, who can hold their breath longer than some dolphin species. So, they do come up to breathe quite a bit.

**Aside:** So, usually they surface two to three times a minute to breathe. But they can, on average, hold their breath for around 10 minutes and a sperm whale can hold its breath for up to 90 minutes while hunting in the deeps. But the mammalian record is a beaked whale that lasted 222 minutes underwater without breathing for 3.7 hours. That is the exact length of the 1962 film, *Lawrence of Arabia*. You can probably hold your breath but don't try it using that film because you can probably only hold your breath for 30 to 60 seconds. But a Tom Cruise can hold its breath for 6 minutes and a Kate Winslet can famously best that with a 7-minute and 15-second breath hold for the film *Avatar 2*.

And those numbers, I'm sorry guys, they're weak sauce to a man from Croatia who breathed in pure oxygen and then held it for over 24 minutes, breaking the world record in 2021. But you know what? 30 to 60 seconds is fine, that's fine. Breathing is cool as hell; you have nothing to prove so just keep at it as often as you need to.

**Alie:** Okay, what about sleeping? I feel like I read somewhere, tell me if this is flimflam, does one half of the brain sleep while the other one is awake? Does that happen?

**Justin:** Yeah, totally true.

**Alie:** Oh my god, okay.

**Justin:** And it's because of this conscious breathing thing. So, you know how one half of the brain is connected to the opposite side of the body? So, if you see a sleeping dolphin, they will have one eye closed and the other one is open, and they're just sort of lazily swimming along. And that's because half of their brain is keeping them awake to look out for sharks, to stay with the other dolphin friends it's swimming with, and to go up to the surface to breathe. And so, it'll do that for a few

hours and then it'll switch so the other side of the brain now takes over, and it'll just slowly, lazily keep going up to take a breath. They sleep for maybe 8-ish hours depending on the species, in total, switching off and on.

**Alie:** And is that... I suppose that must be restful enough, right?

**Justin:** Totally, it works great for them. There are these crazy experiments where they're like, "Is this really true? We're going to see how awake they are or how much rest they're getting." And so, you do this experiment where you get the dolphin to touch a paddle like every minute and you just keep that up for hours, and hours, and days, and days, and see if it will still do it. And yup, they can do it *forever*. They're awake enough to actually engage in things and are obviously getting enough sleep to survive.

**Alie:** Wow. What are they eating? Who is eating what?

**Justin:** They eat the stuff you would totally expect them to eat. So, whatever fish, and squid, and such.

**Alie:** Do they have to dive really deep?

**Justin:** Some species do need to get down into the area where the fish are. There are species in the shallow parts of the ocean, they'll dig into the sand, they can actually see into the sand with their echolocation, that's a whole thing, and find buried fish there. So, they will follow fish down around places, hunting at night, hunting during the day. There are so many diverse ways that they get food and tactics that they use, like the tool use you see with sponges in Shark Bay, they will use tools to find fish. They use these crazy techniques where they make all these, like, mud plumes in a big circle to herd the fish in and then they'll jump through. It's crazy complicated.

**Aside:** What about sonar in your face? So, Justin is an expert in this, and we'll get to it right after a quick break from sponsors who make it possible to donate to a cause of the ologist's choosing.

And this week, Justin directed it toward the Dolphin Communication Project, whose mission is to promote the scientific study of dolphins and inspire their conservation. So, whether you're a young student interested in learning more about dolphin biology, or a college student looking for internship experiences working with dolphins, or a seasoned researcher hoping to connect with colleagues on topics of dolphin behavior, ecology, or cognition, Dolphin Communication Project has you covered. And Justin is a Senior Research Associate with them, and the Dolphin Communication Project will be linked in the show notes. So thanks, sponsors, for that.

[Ad Break]

Okay, let's dig into their enviable ability to see with sound.

**Alie:** What about the echolocation? They navigate through dark waters using it?

**Justin:** Yeah, so echolocation for dolphins is very similar to bats in that they make a click sound and it goes into the water, bounces off of a thing, and comes back, and that provides them with some sort of... something, maybe like a mental image of what's out there. [*dolphin whistles and clicks*] There's great experiments to show that the echolocation is just as powerful as their vision in terms of producing information about the objects that it's chasing. And so, it works in the dark so they can navigate, they can find fish, hunt fish, all with just making these clicking sounds. And if you swim with dolphins, in the wild especially, it's just constant. There's constant echolocation happening all the time.

**Alie:** How do they not get confused since they're such social creatures about whose echolocation is where? Does it ever confuse them to hear all those clicky clicky clickies?

**Justin:** Yes. Now, this is exciting. Now you're getting into the area that I studied for my own PhD stuff.

**Aside:** His PhD dissertation, “Joint attention and echoic eavesdropping in wild bottlenose dolphins.” Dolphins eavesdrop?? Oh, spill it.

**Justin:** Echolocation is directional in the sense that it doesn’t just go out willy-nilly. You know the top... the forehead of a dolphin is this big clumpy lump? That is filled with a fatty material that they can actually control and move around and shape. And they can shape the echolocation outgoing clicks into like a beam, so it’s like a flashlight and they can make it wider or narrower. So, they’re running around, *swimming* around, with their flashlight beams out so, you know, it’s like Ghostbusters, they don’t cross the beams. They can separate themselves so that they don’t mess each other up.

But! Now this is exciting. This is what I study. So, let’s say you and I are swimming next to each other, we’re dolphins, [*Alie says, “Heyyyy” through bubbles*] and you’re echolocating on a fish, and I just happen to be right next to you. The clicks that you’ve made, I can hear them. They go into my jaw, that’s how dolphins... that’s where the ear is, up into the inner ear. And I can get a mental image of what you’re echolocating on because I’m next to you. So, whatever you’re echolocating on, I also see in my brain.

**Alie:** Do they hunt together that way?

**Justin:** It seems like they do, yeah. So, if you get a group of them, they won’t all be like click-click-click-click. There might be a couple that will make the echolocation and the others are quiet next to them. They’ve got it figured out. So, they don’t jam each other.

**Aside:** Like if you’re on a road trip, you don’t need everyone in the car to drive or even have their individual phone’s GPS blaring for the same destination. They’re like, “You wanna chirp? Chirp.” And then another one is like, “Hey man, I’ll chirp. If I’m not navigating, I get seasick.”

**Alie:** What about some kind of ultrasonic capabilities? Is that through the echolocation?

**Justin:** Yes, so humans hear up to 20 kHz and dolphins can make sounds up to like 140, 150, so just stuff that’s way outside of our range. The clicks work so that the lower ones, just like us, travel further. And so, the higher frequency clicks that they use give them more detailed information so if they really need to figure out the details, they’ll change where the energy is and the frequency spectrum to get better details of things, and they’ll use those really high frequencies for that.

**Alie:** I remember Joy Reidenberg, so we had her on for Functional Morphology...

**Justin:** Oh cool!

**Alie:** She’s amazing, and she mentioned about how dolphins were used for military training and all kinds of things. She also mentioned that when she was pregnant, dolphins gathered all around her kind of like poking at her belly like, “There’s another one in here,” and that they’re able to almost, like, see things like an ultrasound.

**Justin:** Yeah, a lot of people have that particular story, that dolphins are interested in pregnant women. That seems to happen so much that it’s probably true; I don’t know if it’s been formally studied. But it’s completely within the realm of normalcy because the echolocation clicks are in the water, and human tissue is mostly water, so it’s not too difficult for that click to go through the belly, hit the baby, and then the baby’s got like bones in it so it bounces off of the bones and comes out. So, if a dolphin is used to echolocating on a regular non-pregnant person and it doesn’t have a weird sack of bones in the front of the stomach [*Alie laughs*] and then suddenly they show up with a sack of bones they’re like, “What is *this*?” [*“I would like to see the baby.”*]

**Alie:** What about dolphins pregnant themselves? Do they have litters of two? Do they have ones? What do they tend to produce?

**Justin:** They usually pop out just the one, and that's the strongest bond in the dolphin community, most all species, is between the mother and the calf. The calf comes out and it's kind of small, it comes out all folded up, it's absolutely adorable. If you look on YouTube for "dolphin birth," they come out and they're all like, they're literally folded; the dorsal fin is flopped over, the flukes are flopped over, and it just sort of pops out like a little plush toy.

**Aside:** Now, given that they have a face shaped like a dildo, you would imagine they would come out snoot first. But no, oh no. Dolphin babies – they're called calves because again, they descended from deer that were on dry land – these little gremlins scoot out of dolphin vaginas tail first, which is not aerodynamic. But they end with a bang on their face reveal they're like, "Hello, it's me!" And then also a plume of what looks like strawberry jam in the water, kind of like a party horn. And they're immediately swimming as if they'd been doing laps in the mama dolphin who was a fish with a womb, but not a fish.

**Justin:** And then the mom pushes it up to the surface and then it's there, it stays right next to the mom, almost not leaving the mom's side for months and months, and it'll be there for two years nursing off of her.

**Alie:** Where are them boobies?

**Justin:** They are inside. So, you have these mammary slits. So, they look literally like somebody slit the dolphin with a knife. And they're just on the side of the umbilical area and the genitals, up from that. So, if you're a little dolphin and you want a drink of milk, you poke at that area with your rostrum.

**Aside:** So, that's the nose or the snoot and it comes from the Latin word for beak.

**Justin:** And then the mom sort of squirts out milk in like a jet and then the dolphin drinks it. So, they're not putting their rostrum inside, it comes out like... I don't know, like you're hosing somebody down with a beer from a keg. [*Alie laughs*] I don't know what the analogy is, but it shoots out.

**Alie:** Like an espresso machine.

**Justin:** Like an espresso machine with yummy milk.

**Alie:** Okay, what about mating? Are there alpha males? Are there pods of roving horny males? I mean, what's going on, man?

**Justin:** Yes, it depends on the species but for bottlenose and generally, mostly it works the same for all species which is, you have female groups and then you have males, and they're promiscuous in the sense that males will just sort of mate with females willy-nilly. They don't know if they've fathered a calf at all, so you never know who the father of any dolphin is. Within dolphin society, they don't have the vaguest idea who impregnated them.

But you do have a lot of dolphin social systems built around this tension of females trying to stay away from all of those males who want to mate with them. That's like the main tension because the females want the choice of who they're mating with, the males just want to mate with everybody. [*"Augh, as if!"*] And that's when you get these coalition groups like you see in Shark Bay Australia, very famous, where you have three or four males that will form sometimes a lifelong bond. They spend all their time with each other, and their little group is designed mostly to just find females as a group and try and mate with them. And that group will join up with a rival group sometimes and form an alliance. So, now you have two male groups trying to chase after the female and even these super alliances of other groups. So, you have this mishmash of mafia groups all collaborating and competing just to mate with the females.

**Aside:** Creeps, full-on creeps.

**Alie:** I'm going to guess that it is not always consensual.

**Justin:** Aha! Now we're into something so exciting when it comes to dolphins that people, I'm sure, are going to probably ask me a lot of weird questions about. But "what is consensual" is a weird question in the animal kingdom. Because you have forced copulation, like your otters, you've heard the otter story.

**Aside:** You can see the Lutrinoology episode for more on this. It will blow your mind, it'll break your heart, it'll shatter your love of otters, I'm sorry.

**Justin:** And it is crazy. The male will grab the female and she does not look like she is at all interested in that, but what is that? It's part of the system. And so, it's really difficult to know what a female otter is thinking in that.

But what's weirder with dolphins is that they don't have hands or feet so there's nobody grabbing anybody and holding them. So, it never... there's no examples of forced copulation in the dolphin world in that sense, because it looks kind of like the female is not interested in mating with these but sort of, maybe? It's hard to tell what's going on. So, maybe she is interested. But then you get into vaginas and then things get interesting.

**Alie:** Talk to me about dolphin vaginas.

**Justin:** So, there's so many cool experiments on vaginas. And species have folds in their vaginas, right? So, the vagina of a dolphin, depending on the species, is pretty convoluted, it's almost weirdly cork screw shaped, with all these weird cavities and folds. And that tells you that there's competition between the male and the female when it comes to whose sperm gets to fertilize the egg.

So, a female might not want to mate with these three males that are coming at her, but she will end up mating with them. But while she's mating with them, let's say she likes George the best, she'd like him to be the dad, and she doesn't like Fred and Charlie or whatever. So, while Fred and Charlie, they've ejaculated inside her, she can sort of twist her body and shift the vagina around so that the sperm ends up in a fold somewhere. And then the other guy she wants to mate with, she can kind of make it so that sperm gets through. So, in that sense, she might be cool with mating with a bunch of these dudes even though she doesn't necessarily want them all to be the dad. But she has some control.

**Alie:** Oh my god. Just putting it away in a drawer, she's like, "I'm not going to use this." I mean, oh my god. What about blowhole sex, does that happen?

**Justin:** For some reason, if I go down in infamy, it's for having debunked the concept of blowhole sex so please allow me to talk about this. This is my favorite subject. *[Alie laughs]* Which is why... *[both laughing]* Okay. So... *["Let's get into it."]* There are lots of pictures on the internet of this one drawing of blowhole sex and Ricky Gervais did a whole comedy special where he talks about blowhole sex, he shows this picture.

*[clip of Ricky Gervais standup:]*

*Can I have the next one, please? Oh, that's a good one. Two forms of copulation between botos, they're a type of dolphin. Genital slit or anal penetration above, and blowhole penetration.*

*[audience laughs] Oh yes.*

And the idea is, like, a dolphin will be underwater with another dolphin and stick the penis in the blowhole.

So, when I heard this, there's pictures. So, I'm like, "It must be from a scientific study," but I'm like... to me, this doesn't make any damn sense because if a dolphin opens its blowhole underwater, which we know is a conscious act, it has to decide to do that, water gets in its lungs, and that's bad, and it would die. So, I'm like, "There's no way they're doing that." So, I'm like, "Where does this come from?"

So, I tracked down where that image came from and it's from this one paper which is referencing another paper from, like, ages and ages ago. So, I found the original and only reference to dolphin blowhole sex in the peer-reviewed literature, and it was from this observation at a zoo in Germany where there are these river dolphins...

**Aside:** As detailed in the 1985 paper, "Some Observations on Behavior of Two Orinoco Dolphins in Captivity, at Duisburg Zoo," in the *Journal of Aquatic Mammals*. There are also illustrations in which the dolphins appear to be smiling.

**Justin:** And the people who were observing it said, "The dolphin's penis sometimes during these social playthings with two males would go around and sometimes into the blowhole of the other dolphin." And I'm like, "Okay, that sounds wrong."

So, I tried to track down the authors. Most of them were dead. I found a living one [Alie laughs] I'm like, "Were you there? Did you see a penis go into the blowhole?" And he's like, "No, it played around the blowhole, it never went in." And that's it. That was the only scientific observation of blowhole sex and it never happened.

**Alie:** Not even the tip.

**Justin:** [laughs] Just the tip he said, and no, there's not even the tip. Everything was fully out. [*"The myth as we know it yes, is busted."*]

**Alie:** Well, what's happening communication-wise? Do you think you can glean anything about dolphin sexuality based on the squeaky squeaks that they make?

**Justin:** About their sexuality?

**Alie:** Yeah.

**Justin:** It's hard to know. When you're studying dolphin communication that's the main thing you do. You're like, "Okay I'm going to record all these sounds, I'm going to figure out what they correlate with. Does the dolphin make this sound when this happens?" That's kind of what we've been doing for a long time and the answer is: Eh... we don't really know. [Alie laughs] There's not a lot of clarity in terms of those sounds and whether... Like, you can tell when they're hunting because they're making echolocation sounds, and you can tell when they've maybe found a meal because they'll make certain kinds of whistles. So, you can tell excitement levels or whatever.

But the one sound, and this is fascinating, that we know definitely correlates to something, is the signature whistle. And that is, for the whistling species out there, because not all dolphins whistle, some only make click sounds, for some whistling species, when a young dolphin is born, it will create a whistle that is unique to itself that it makes. And so, it functions in a sense like a name. So, if you hear that dolphin whistle, you can be like, "Oh, that's dolphin 183, I know that whistle." So, you think, okay, but it would be weird like if you were Alie and you were like, I'm going out into the main street and just shout my name over, and over, and over again, you'd be like, "Well what's the point of that? This person is crazy."

And so, it could be to announce that you're there, which is a perfectly normal thing for an animal to do, like, "Hey, it's me. I'm here, I'm here, I'm here." But we know that they sometimes use each



other's names. So, sometimes a dolphin will make someone else's signature whistle sound to get their attention. So, that means that that dolphin has labeled that other dolphin as a name. So, that's very, very rare in the animal kingdom, which is one of the reasons dolphins are so fascinating to study because they can label each other.

**Alie:** Do other cetaceans do that where they have a whistle to announce themselves?

**Justin:** Yeah, those sort of contact calls, things where you just make a sound to say that you're here. But it's rare for it to be specific to an individual. Sometimes you can... Like, I know the sound of your voice, I listen to *Ologies*, I know what you sound like, so I could pick you out of a crowd. But that's not the same thing; that's just me understanding how your voice sounds different than my wife's voice, I know the difference. That's not the same thing as a name.

**Alie:** Well, speaking of that, AI can simulate peoples' voices a little too well, in my scared opinion. Can you as researchers use AI to mimic certain calls or noises to see how dolphins respond if you don't have a Mariah Carey handy, who is ineffective as a scientific tool anyway?

**Justin:** You totally could and there are lots of ways in which humans are experimenting with dolphins using artificial sounds. Denise Herzing, she's got this little machine that they're working on, and it produces fake whistle sounds that are matched up to objects and activities. So, she's in the water with her research team trying to get the dolphins to learn and use those sounds back. So, that's one way to make— And the dolphins, it sounds very much like a regular dolphin whistle, it's just it's been manipulated.

And then I was reading an article about how you can broadcast fake dolphin or whale sounds that actually contain secret messages. So, if you have a blue whale sound and it goes, you know, they're so low and so loud, they travel almost all the way around the ocean, all the way around the Earth. So, if you're a military and you have to communicate with another submarine halfway around the globe, you could put fake messages into this artificially generated blue whale sound, like crypto stuff. That's cool.

**Alie:** That's got to freak out the whales though, right?

**Justin:** Right? Yes. Ocean noise is such a problem. Oh my god, we're already loud enough, we do not need to introduce fake whale sounds, thank you.

**Alie:** Oh god. What about you and your research? Where do you pull a lot of your data and examples from? What kind of, do you need to use spectrographs, how are you figuring out what is what?

**Justin:** So, at our research organization, we have an underwater camera, so we're recording dolphin behavior underwater, which is rare because most research is done from the boat. And then we've got some hydrophones kicking out to the side so we can record their sounds.

So, the way we do it is we get in the water, whether it's a captive facility or a wild group of dolphins, and you don't want the dolphins to interact with you, you're just there like a creeper behind a bush hoping that they don't notice you because you want them to act normal. And usually, it takes years, and years, and years, and years, and years for them to ignore you and they usually don't. So, that's what we want, we want to record their natural behavior, which is rare, but it does happen. It happens enough so that we can get a picture of what they're really doing. So, we've got the audio and the visuals. And we know who all the dolphins are because we're at these locations for decades. So, we're like, "Oh this is the son of this female who is the..." So, we can trace back generations.

**Alie:** So, some of that is in the wild then?

**Justin:** Yeah, we had a research site in the Bahamas around Bimini with a group of dolphins that lives there all the time, just offshore. And then I did my research out in Japan around the island of Mikura, which has a resident population of Indo-Pacific bottlenose dolphins and a tourist industry. So, there's boats that go out to watch them, so I'd just get on the boat and then jump over the side with my camera and watch all the tourists chase after the dolphins and fail to catch them and then I'd just record them. [*"Yes, that's amazing. That's gorgeous."*]

**Alie:** Was anyone ever surprised like, "Hey, what's that guy doing? Why is he in the water?"

**Justin:** Yes. Because I'm like, this tall white dude, and I'm so skinny and weird looking, and then I've got this giant camera. It must have been massively confusing to an average Japanese tourist. My Japanese was terrible, I could pretty much just say, "Excuse me." [*"Sumimasen."*] Yeah, it was probably weird for them.

And I would always do a thing, because I'd been with dolphins for so long, I know what they like and don't like. They don't like it if you swim at them. This is my pro tip, if you're ever swimming with a dolphin, here's my pro tip: don't swim at them, swim in the same direction that they're swimming as fast as you can, and then they might come up to you and be like, "Oh, what's this guy doing?" [*laughs*] But if you swim at them, they're like, "Get outta here," and then they leave.

**Alie:** Do you need to wear massive flippers for that?

**Justin:** Yeah. Especially because I suck at swimming. I picked the wrong career, perhaps. The bigger the flippers, the faster you can go. So, I'm always the guy out front, the weird skinny white guy with the camera, swimming alongside the dolphins. That was what I did with my massive flippers.

**Alie:** Did you ever feel like you had a moment with a dolphin? Not like a, "Let's move to a house in Florida together," moment but like, did you ever have a moment where you felt like a dolphin was like, "Hey man, what's up? How have you been?"

**Justin:** Incessantly. There are dolphins that I would see over and over again because you can recognize them based on their spot patterns or their dorsal fin or scars, and I would have some dolphins who seemed interested in me, and I was interested in them, and they'd spend more time with me. People who study them long term have this all the time. Dolphins have different personalities, obviously, so you'll have some that are curious and friendly. And I did make some friends, as it were, and so I've had... It's so difficult as a dolphin researcher to remain cool and objective and so yeah, I'm just, "This isn't the best thing that's ever happened, I'm just a scientist." [*Alie laughs*] So, it can be hard to be chill about it, but you're supposed to be chill. But yeah, there are dolphins that I've known, and some have died and I'm legitimately sad, it's like my cat died, you know? And so yeah, you make friends.

**Alie:** How do you know if a dolphin considers you a bro?

**Justin:** If it's not trying to attack me, I'd say that's probably a good baseline. [*Alie laughs*] But no, I think because dolphins' behavior underwater is not always 100% easy to understand for some people because their aggressive behavior can look like playful behavior. And so, they are aggressive and signaling to people to back off, but then they're sometimes very friendly and they will playfully bite at your flippers. And sometimes they will even touch you, which is very rare. But if a dolphin comes up with their pectoral fin and sort of rubs against you in a nice way, you've made it. That's when you know you're in the group.

**Alie:** Oh my god. I have so many questions, can I ask them?

**Justin:** Yes please, oh gosh. I bet there's an LSD question in there, I hope.

**Alie:** Let me check. Let me find and confirm... Hold on... Yup. Four of them. Four people asked about— let's get straight to it.

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So, come back, cooome back next week to hear all about dolphins on acid, and all of your most burning dolphin questions. I promise you this episode only gets weirder in Part 2, it's a good one.

Meanwhile, ask intelligent people uninformed questions because the whole point is to gather intel. And follow Justin Gregg on TikTok, on Twitter, everywhere at the links in the show notes. We love him. His books are also linked in the show notes, and he is as wonderful a writer as he is a charming guest.

So, we are @Ologies on Twitter and Instagram, I'm @AlieWard on both; I'm on TikTok @Alie\_Ologies. *Smologies* are shorter, kid-friendly episodes with no swears, they're available at the link in the show notes. Thank you, Zeke Rodrigues Thomas and Mercedes Maitland for working on those. *Ologies* merch is available at OlogiesMerch.com, thank you, Susan Hale, for managing that and doing so much more, like everything for *Ologies*. Noel Dilworth does the scheduling and saves my life constantly. Erin Talbert admins the *Ologies* Podcast Facebook group with assists from Boni Dutch and Shannon Feltus. Emily White of The Wordary does professional transcripts. Kelly R. Dwyer makes our website and can make yours too. Nick Thorburn made the theme music. Assistant editors are the wonderful Mark David Christenson and hunk of the month, Jarrett Sleeper. And lead editor, with a giant brain, is Mercedes Maitland of Maitland Audio.

And if you stick around until the end of the episode, I will tell you a secret. This week is that I'm at a hotel for a science conference and I fell asleep last night working on this, next to my laptop and I woke up in the middle of the night and my laptop was warm and I thought it was my dog Gremmie, and I went to pet it and I realized it was a machine and that I'm not at home. It was a very confusing moment. I also had whacky dreams all night, one of them involved piloting a hovercraft and showing Amy Poehler a bunch of cool scorpions and spiders. So, I gotta let Dr. Domhoff from the dreaming episode log that into his DreamBank. So many spiders but it was a good time. Okay, berbye... Come back next week, ohhh, Part 2 is so good. Okay, berbye for real.

*Transcribed by Aveline Malek at TheWordary.com*

### **Links to things we discussed:**

Visit Dr. Justin Gregg's [website](#) and follow him on [Instagram](#), [Twitter](#) and [TikTok](#)

Buy Dr. Gregg's books: [If Nietzsche Were A Narwhal: What Animal Intelligence Reveals About Human Stupidity](#), [Are Dolphins Really Smart?: The Mammal Behind the Myth](#), and [22 Fantastical Facts About Dolphins](#)

He also has a [Substack newsletter](#)

A donation went to [Dolphin Communication Project](#)

[Dr. Gregg's PhD dissertation. Joint attention and echoic eavesdropping in wild bottlenose dolphins \(\*Tursiops aduncus\*\)](#)

[Note sur l'origine et la signification du terme «dauphin» \(de Viennois\) – Note on the origin and meaning of the term "dolphin" \(from Viennese\)](#)

[Thermal tolerance in bottlenose dolphins \(\*Tursiops truncatus\*\)](#)

[Denise Herzing: Could we speak the language of dolphins?](#)

[Dolphin Dialogues – A Conversation between Dr. Denise Herzing and Dr. Lori Marino](#)

[Call of Chicago: John C. Lilly, One-Man Mythos](#)

[“On “modified human agents”: John Lilly and the paranoid style in American neuroscience. History of the Human Sciences”](#)

[Teaching a dolphin to speak English - The Girl Who Talked to Dolphins: Preview - BBC Four](#)

[Among John's favorite jokes \(he had a wonderful sense of humour\) was flashing the Vulcan sign for "Live long and Prosper".](#)

[Margaret and Peter: a sensual but not sexual partnership](#)

[Long ass movies](#)

[How Kate Winslet held her breath for 7+ minutes](#)

[Whale and dolphin brains produce more heat than those of humans. What exactly does that mean?](#)

[Depressed dolphin who played Flipper 'drowned herself' in trainer's arms when TV hit ended](#)

[Humans and Dolphins: If Brain Size is a Measure, We're Not That Different](#)

[A few images from the life of Dr. John C. Lilly](#)

[On 'modified human agents': John Lilly and the paranoid style in American neuroscience](#)

[Some Observations on Behavior of Two Orinoco Dolphins \(\*Inia geoffrensis humboldtiaba\* \[Pilleri and Gehr 1977\]\), in Captivity, at Duisburg Zoo.](#)

[Cetacean Welfare in Professionally Managed Programs](#)

[WHAT’S THE DIFFERENCE? DOLPHIN VS. PORPOISE](#)

[Happy the Elephant Isn’t Legally a Person, Top New York Court Rules](#)

[The dolphin who loved me: the Nasa-funded project that went wrong](#)