THE LEAKEY FOUNDATION

Origin Stories Episode 14: Being Human: Why Do We Laugh?

Meredith Johnson
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This is Origin Stories, the Leakey Foundation podcast. I'm Meredith Johnson.

This episode is all about laughter; why we laugh, how we laugh, what laughing tells to people around us and how you can tell a real laugh from a fake one. This is another of our special live episodes from our Being Human event series. Our speaker is Greg Bryant. He is an Associate Professor of Communications at UCLA. He studies the evolution of communication and vocal behavior. He's most interested in the spontaneous sounds we make like screams, cries and especially laughter. Here's Greg Bryant recorded live on stage at Public Works in San Francisco.

Greg Bryant
All right so I'm going to talk today about laughter and I got into studying laughter originally as a grad student. I did my dissertation actually on what kinds of vocal signals people use to communicate when they're being sarcastic and that started my, I would say an arguably absurd academic career and I discovered a lot of things about how people speak when they're being ironic, but one thing I noticed was that people laugh a lot and then later in my career I really took off with it. Now I've got more projects than I can count on laughter and so I'm going to describe a few of them, but I'm very interested in cross-cultural research and very interested in how evolutionary theory allows us to understand human vocalizations, which goes beyond a lot of the ways that traditional psychologists and linguists often think about vocal communication.

I think that we're animals. I know we're animals, actually. I don't just think we're animals. So, here's an example I put together of different facial expressions of threat displays, right? That are originating from emotion of fear and you can see that these different animals are doing the same kind of thing. They're all kind of baring their teeth, right? And there is a, what we call phylogenetic relationship between all these animals. Evolution is conservative, meaning that not politically, it means that evolution conserves structures so it doesn't rebuild things very often it
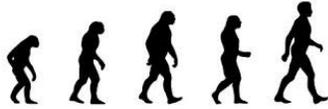
always builds on things that already exist. So if you look at expressions across the animal kingdom you see a lot of similarities and it's not a coincidence. So now I'm going to play a vocalization, an animal vocalization and see what you think. What the hell was that? Walruses? A bear? It wasn't one of these animals. Whale, bear, walrus? I like walrus myself. Well, actually it's slowed down. Let me play it at normal speed. Those are nineteen-year-old females from UC Santa Cruz laughing, not walruses. I added the ocean thing because I'm tricky that way. I've been interested in slowing down animal sounds a long time— well before I became a scientist. It's partially due to my brother whose back there. He gave me my first 4-track. I got this 4-track when I was in my early twenties, like a few years ago. It had a way to control the pitch controls, it was called pitch control to control the speed, right? And I was fascinated with this thing. I'm a musician and I'm interested in making experimental sounds. I also play regular instruments, but I'm really into weird sounds. I'm into sounds.

And so one of the best features of this 4-track was I could slow stuff down and I was just fascinated with this and so in those days you couldn't get stuff off the internet because there was no internet. You had to actually buy sound effect CDs or records— I literally have sound effect LPs— then I would feed them into this 4-track and then I would mess with the sounds and I was fascinated with this idea of how animal sounds and human sounds slowed down sounded so different and I noticed even then when you slow down a cry or laugh or scream or something that was emotional, visceral, the way I thought about it then, it sounded like an animal, it sounded like nonhuman animal. But when you slow down somebody talking which I also would try, obviously, it did not sound like an animal. It sounded like a person slowed down. I always thought this was really interesting and I didn't understand why. So, I eventually came around to figuring out why and I'm going to explain that now.

So that was slowed down people laughing, but I mean how many people thought it was actually humans slowed down? Anybody get that? Smarty-pants. You got it. Smart guy in the back with my brother. So most people don't get that. I actually have experimental evidence showing that people cannot tell whether a slowed down spontaneous laugh is a human or nonhuman animal unless it's produced in a fake way and so I'm going to explain a little bit of that, the difference between a fake laugh and a real laugh and what that actually means.

All right so let's just start with the basic question, the most unfunny part of what a laugh is which is it's a neural mechanical oscillation involving respiratory and laryngeal activity. That's my definition of a laugh. It is an involuntary vocalization that is evolutionarily related to vocalizations that many other animals produce and that's what makes it such an interesting vocalization for me to study as a person who's interested in evolution and human communication it's really one of the most perfect vocalizations along with crying, which I'm eventually going to get to, but I've not studied crying. Pain shrieks are another one and one of my favorite topics, one
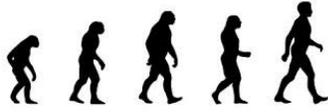
that got me on this laughter kick in the first place was orgasms. I'll talk about that in a minute. It turns out laughs and orgasms share a lot of properties and they are very related. Not a surprise maybe to some of you.

All right, so this is a laugh. What you see is— let me just play it for you. Not a funny laugh. But that's a rule of standard kind of laugh and you can see that laughs have these certain characteristics like they have usually an initial onset that's louder than the rest and there's a slight decay in the volume and then you have these calls where basically there is a glottal cycle meaning that the glottis which is in your larynx that opens and closes, when it closes the air gets forced through and then vibrates that makes the tone and when it opens then just air goes through and then you don't hear that as a tone. So when the glottis closes then you actually get this fundamental frequency which correlates to a pitch and then it opens and so basically a laugh is this rapid opening and closing of the glottis and it is involuntary and hard to do on purpose. And so when you try to laugh what I would say volitionally, when you try to laugh on purpose, it's hard to actually get it right. Now some people can and I'm going to show you data about that.

But laughing is variable in how it comes across. So there are lots of different kinds of laughs so let me just play you— these are all laughs I've recorded in the lab and let me just play you a little collection of them. Am I sure they're genuine laughs? I'm sure they're laughs, but what vocal system produced them, which I'm going to explain in a minute. I don't know for sure but most of those are probably fairly real, but some of them are fake. All right so there's a lot of variation in how laughs actually manifest themselves, which makes them difficult to study, but really it's kind of paradoxical and interesting. We all know when we hear a laugh even though they can manifest themselves in all these different ways acoustically, we all know it when somebody laughs, but if I take them out of context then they're really a little harder to tell if they're a laugh because they sound like the one which I actually should play that one by itself. I call it squeaker laugh. When you hear it in context it totally sounds like a laugh, but out of context it just sounds like a weird noise.

All right so that's a standard laugh. Laughter is related to vocalizations that other animals make. So let me just play a few. This was done by my friend Marina Devila-Ross, the late Michael Owren and Elke Zimmerman. What they did is they looked at the acoustic features of laughs across different primate species and then they tried to reconstruct the phylogeny of vocal behavior in primates. Now it turns out many animals laugh and the laughs, we call them laughs and that's probably an anthropomorphic way of describing them, but what they are, are they're play vocalizations. So they are vocalizations that animals produce when— usually juveniles— when they're doing rough-and-tumble play and it's a way of telling the other animal, "I'm not threatening you. I am playing." And they're usually quiet in most species, which is why they're really hard to record and now we're going to have wireless mics that attach to fur— I can't wait
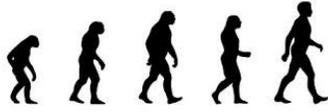
for this— because I think actually all social animals produce some analog of this kind of vocalization— it's just a matter of getting them, but we know rats do them. So rats produce ultrasonic play vocalizations and they sound kind of like laughs when you bring them down into our frequency range. We can't hear them because they're at like 40 kHz which is well beyond our hearing, but they produce these and you can tickle rats and they love it and when they play— Google it. Put it in your notes right now, Google rats laughing. It will come up Jaak Panksepp. He has an aquarium— not an aquarium, a terrarium with rats. They are in the terrarium and he's tickling them and they follow his hand around and they're laughing up a storm and then when they play with each other they're laughing too, but you have to have a special recorder, one that's designed to record bat vocalizations in order to hear them. And then you bring them down into our hearing range and squeak, squeak, squeak (sic) that's what they sound like. So rats do this, dogs do it, but dogs also do something else that's similar to a laugh.

So when a dog wants to play, what do they do? They wag. How about a play bow? And that is a signal a dog makes to another dog saying "I am now going to attack you, but I don't mean it." and it often doesn't end well because it's not clear how the signal turns off, right? So it's not like "We're playing now. I'm biting and attacking you, which normally would seem aggressive but we're playing" and then you go little too far. Which is kind of the way kids are, right? Kids are playing, they're laughing and then suddenly somebody's crying. So laughter is a play vocalization that I think is functionally very similar to a play bow in a dog. It allows us to play and that doesn't mean this isn't going to hurt, but it does mean that you're not being threatening and aggressive in the way you might otherwise seem to be if you didn't have that behavior. That's one function of laughter. Let's listen to some of these. Here is the orangutan. Here is the gorilla. Do you hear the similarity? Now chimps are an interesting thing. They do something unique which is they do not just egressive, meaning outward, but they go in and out, right? And the idea here is that laughter is basically a labored breathing during play.

This is Robert Provine who has written about laughter quite a bit that maybe some of you are familiar with and what he has claimed is that he calls this labored breathing during play. So originally, this is what animals would do when they were playing which is a phenomena in animal signaling where signals become what we call ritualized, meaning that originally they're produced for some nonconductive reason and then they become communicative and then take on exaggerated features that facilitate that evolutionary function. So this is a fairly well understood and well described process in animal signal research and this is what's happening with laughter. So it's becoming an exaggerated version of this labored breathing during play. Finally here's some human laughs to compare. That's my favorite laugh of all time, just telling you right now. I'm going to play that one again in some different ways. I slow it down and it sounds awesome but here's another one I think really brings out the connection between these nonhuman laughs and human laughs. I mean you can hear how that's a laugh, right? But it also makes it kind of
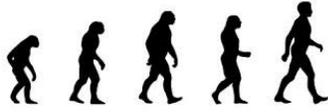
obvious that it connects to these other vocalizations. So these guys, based on this acoustic data they reconstructed the evolutionary history of laughter and also being mindful of what we know about the genetic relationship between different primate species, particularly the great apes and so you can see that the last common ancestor had what they think are these certain features which are long slow calls and they're noisy. So it was probably the first laughs in primates was something like that. And they're probably breathing while they're playing, but then eventually you have things like vibration regimes which means there's tones and then chimps involved this alternating airflow which makes them different and we have more regular voicing which is important and egressive airflow and then, this is also by Marina Devila-Ross, but I added my little thing here which is when speech emerges we have volitional laughter which is where the fake laughs come in which this chart doesn't represent until I put that little part in there. She knows. It's cool.

All right so let's do a little test. See if you guys can tell when a real laugh or fake laugh. First one. Real laugh? You guys are smart. I make it easy at first. Actually there's a reason why it's so easy. It's because we have evolved machinery that's designed to detect these kinds of things, but it can get tricky. How many people think it's real? How many people think it's fake? Oh, jeez. I'd say that's almost 50-50 with a slight bow on the real. That is a fake laugh. Pretty good though. That could be your friend. That is actually maybe one of the best fake laughs and in my research, I've got research from all over the world and that one is rated as real by people almost like eighty percent of the time. That's real. Real? Fake. Oh, yeah. I would call that one real. I mean, that's what people think. Now mind you I didn't have wires hooked up to their larynx or anything on their brain to actually corroborate. This is what people think that they're real and it was produced by woman speaking to her close friend in a conversation. So that's good evidence that it's probably more likely to be real. All right last one. See what you can do here. That's fake? How many people think that one is real? All right, compare it to this one. That's super fake, right? Little better? Still fake? Okay that is fake, but what I did is I sped it up and it turns out if you speed up fake laughs you make them sound real and I have an explanation for that. It has to do with the control the glottis, the opening and closing of the glottis is in control by one brain circuit and it's got an evolved, efficient control over it and when we're speaking it's harder to control that opening and closing on purpose. So even though you guys weren't tricked, many of my subject were tricked.

Now here's just an example looking at the fake versus real laugh. This is the spectrogram of them. One thing you'll notice is that the spontaneous or real laughs are faster generally. Here's the laugh that we heard. Now if I speed it up you already heard that it sounds little more real, even though you guys didn't believe it. But now check it out when I slow it down. That still sounds like a person, right? That doesn't sound like a walrus or a bear or whatever. Now listen to this laugh, my favorite laugh. Now check it out when I slow this one down. That doesn't sound
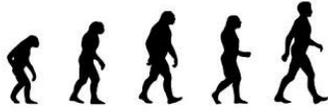
like a person so much anymore, do you think? Sounds like an animal. So I've got research showing that when you play spontaneous laughs, those are laughs that are produced in conversations between people that know each other, those laughs are more likely— when you slow them down 2.6 times, slow those down and people are chance at deciding whether or not they're produced by a human or nonhuman animal but when you play them the volitional laughs, the fake ones, then they are sixty five percent accurate in identifying it as a human. So what that suggests to me is that there are features in those acoustic laughs that, while really brought out by that slowing down process, that then reveal it as an animal vocalization that really shares properties with other nonhuman animal vocalizations. As opposed to speech which is a very human-specific vocalization that has unique characteristics that help us identify it as being produced by a person.

Now one thing I've discovered is that if you look at the ratio of how much voicing versus how much is unvoiced here, where there's no tone, the higher percentage of unvoiced components per call correlates with people's judgments of whether something is real or not and I think this is a direct consequence of the machinery underlying the production of these different kinds of laughs. So spontaneous laughs are involuntarily produced and they involve certain sorts of breathing mechanisms that are really difficult to control on purpose and so laughs that are produced by the speech system are more speechy, meaning that they have a higher proportion of voicing vowel sounds, right? Ha-ha-ha (sic) the ultimate fake laugh, right? There's no breathing in there. It's just all vowels, right? But if you start going hee-hee-hee (sic) then it sounds a little more real, right? So that's your trick. If you want to make more real laughs make them faster, make them higher pitched, like you're aroused and try to make it so they're a little more breathy. There it is.

Now I'm not going to go into this detail, but there is actually, I didn't know this when I was twenty-two years old and slowing down chickens and seals and humans and chimps, I didn't realize what I was getting into. At the same time then, this guy Juergens was working on squirrel monkey vocalizations and kind of figured out that there's some special circuitry that is unique to mammals that is different than humans. So you have a very simple sort of circuit here that this aqueduct of gray region that goes right straight from— is basically amygdala to larynx. The direct connection. Whereas speech involves all these other connections that involve language and the control of speech articulators. So we have to control our tongue and our lips and other muscles in our neck and our larynx that allow us to make speech sounds and when you incorporate those mechanisms which actually allows us to imitate a great number of sounds, humans are vocal imitators, it allows us to imitate things like crying, and laughter and pain shrieks and orgasms and all these other things that can be fake, but there are ways to look at them acoustically and see the signature of human specific production.
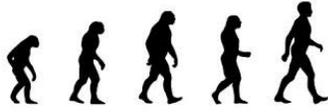
So let's think about when people are laughing. What's going on? So imagine you have this guy here he produces this utterance X. That's a surface feature like what you actually say, but he means Y, which is the un-stated implicit meaning, right? This is sort of like— a lot of jokes are like this— it's encryption, right? So my friend Nicole, who is here somewhere, might ask me, "You got free drinks for doing this?" and I said, "They gave me two tickets." and she goes, "That's not enough." Ha-ha-ha. I'm just kidding. I'm sure they'll give me more if I ask. And then we have a laugh. That's a humor circuit right there, but it's encrypted that two is not enough, so that's funny to her, right? That's not funny maybe to this guy who doesn't know that I like to drink and so two sounds like plenty, you know? But hey, I'm taking a cab home. So he goes, ah-ha-ha-ha (sic) It sounds like you're trying to be funny but that's— I don't get it and then we have an awkward interaction, right? Humor is encryption. A lot of intentional humor involves me implying things that people know, but you don't say the thing that's funny. That's why explaining a joke ruins it because the funny thing is when you are able to signal, I know what you are saying, I know, I gotcha. And a lot of things that we don't think of traditionally as humorous do elicit laughter and will often— there's a classic example of this guy Provine who studied people in natural context and seen when they laugh and his whole thing is that it's not funny. It's not about humor because some of you would say, "Okay I'll see you later" and everybody goes "Ha-ha-ha" but what Provine's not recognizing— I told him this and argued with him. He probably agrees with me— is that you don't know why it's funny. The reason that I'll see you later is funny is because the next time I see you, you will have gone through that hellish experience you were describing to me or whatever it might be. There's something else in there about seeing you later that's not just in the surface features of the utterance. So humor is encryption and laughter can be a way to signal I get encryption. I decrypted it successfully and if I didn't decrypt it then I'm faking it.

All right, so I looked at this real and fake laughing across seventeen— this is an ongoing study. We got three more sites coming in, I think. So we have twenty— so in twenty different places in the world we asked people to judge a set of laughs. Half were produced in context where people were having conversations with their friends that they knew and half were produced on command where we had them in the lab and we said, "Now laugh," and they would go, "Ha-ha-ha." Now some people would produce some pretty good ones like you heard, right? So I didn't pick ones that were ridiculously bad. I picked ones that made it a challenge, you know? But then we played these for people all over the world and seeing if they could tell the difference and it turns out they can. So here are the results from the seventeen societies and basically this bar here represents chance performance. So every single society is above chance overall. The average is about fifty-four percent accuracy in getting the right answer here. There are some interesting patterns. So for example we have three traditional societies— a rural Peruvian society, the Shuar people in Ecuador and Zulu people in South Africa. They were living in fairly traditional ways. They all had this pattern where they were more accurate at getting the answer when the correct
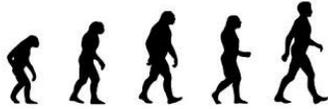
answer was it's fake and that's actually more accurate because a lot of the real laughs were probably fake, like you were asking before how do you know that's fake or real, I actually don't I'm just using the context as my criterion, but it turns out that a lot of our real laughs in conversation are conversational laughs that are produced by the speech systems. So, fake in that sense. Now, that doesn't mean that they're trying to deceive each other, two friends that are laughing in conversation. It can have a lot of functions in conversation like I get what you're saying or it's your turn to talk or I think it's funny but it really didn't trigger of real humorous reaction in me, whatever, but the answer is probably that more of these laughs were fake than real overall. So I think it's interesting that these people, these traditional people were actually probably little more accurate. Now other places have this bias to say the laughs are real. So Americans for example tend to think that laughs are more likely be real, just baseline on average. So they end up being a little more accurate in getting the right answer on the real laughs. So this is a good, I think, demonstration that no matter where you go in the world people can hear laughs produced by UC Santa Cruz 18-year-olds and decide whether or not they are real or fake with actually reasonable accuracy.

All right, so let's go back to the guys here and check out another situation. So we have the same guy producing some sort of utterance the service feature which denotes why which is the implied meaning and these guys all get it, all right? They're in on the joke and then they all laugh and now we have a group of people laughing. Whereas this guy is like, "I don't get it." But he knows something is funny, "I know these guys have some idea of what this is about but I don't know what it is, but I'll just pretend" and now he's laughing a little bit, right? Now if you have a situation, and then this guy laughs back, now this guy is over here, he wants decide who here knows each other and knows the shared information that's encrypted and who doesn't, and you can use the laugh as a way to decide who's friends and who's not in this group. Who has the information, right? And these kinds of inside jokes can actually really help a crowd figure out who knows who.

Here's a good example of this from *Breaking Bad*. Hank, what a tool, right? And this is where he realizes this is not the place for me, this makes me nervous, besides seeing a human on a tortoise. Whatever happened to it? That's an inside *Breaking Bad* joke. All right, so let's see how good you guys do. Friends or strangers? Friends? How many people think strangers? How many people think friends? Wow, okay. I'll explain that in a minute. Friends? Now you guys are afraid? Strangers? Now I got you all confused. Those are friends. Strangers? Yep. That's friends? Now here's what I did. I'm tricking you. The first one is actually one I constructed. They were two individual laughs. People that didn't ever interact. They were men. But that last one was the same laugh, except I changed the pitch to make them sound like females. So check it out again. That's men. Now I made them into women. Now, if this experiment worked, well, this is my first try. I have a new theory based on some other data I'm going to show you that people
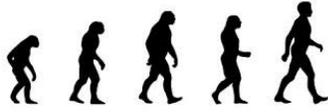
think that women are more likely to be friends than men when they hear them laugh, just at baseline and I know that's true. I've got a lot of data showing that. So what I'm trying to do is show if you think these two men— I need to get more subdued male laughs and then do it— but the men you would think were friends kind of, and then when you hear the same laughs, but then they sound like women then you're going to think they are more likely to be friends even though it's the same laugh. So, I'm trying to separate the assumption that women are friends when they're laughing together versus the acoustic features of the laughs, which I'm very interested in. All right, let's try a couple more. Friends or strangers? Friends? Strangers. They're friends. Stoner or not stoner? Santa Cruz, baby. I actually am pretty sure they were stoned, based on the conversation. I'm serious.

So I looked at this also cross cultures, across twenty-four different cultures, including several indigenous cultures just to see. These laughs averaged one second long. Where they hear a one second clip of laughter out of context and then they have to decide are these people friends or strangers and it turns out and this is many the same places I did it before; so LA, a couple of Peruvian societies, Brazil, all way down to— we got Japan, Korea, and China and I think the indigenous places here we got here, here, there's a bunch. All right and here's what happened here. Basically everywhere we went, people were able to tell the difference between friends and strangers with varying accuracy. The lowest was something like fifty-four percent and the highest was sixty-seven percent. So there was some variation, but one of the most striking findings here was in every single place, two females were judged most accurately, including up here, the American participants were ninety percent accurate in getting the right answer. When they heard two female friends they nailed it. They knew what they were. They all heard the same laugh set, yes. Thank you for clarifying that. They all heard forty-eight clips of two people laughing. Half of them knew each other and half of them didn't. They were all UC Santa Cruz students who were in conversations. So we had half the people had been friends for an average of about two years and then half the people had just met the day they had this conversation and the laughs were extracted from the conversations.

The first time they had an overlapping laugh and the last time they had an overlapping laugh in conversation. So these people all were co-laughing. They were laughing at the same time, but they either knew each other or they didn't and then they were either in female pairs, male pairs or mixed pairs. So what you can see is that there is some similar patterns, but there are some variations as well and so sometimes people were good at getting the strangers that were male and then other times they weren't and there were certain biases that people had. So people tended to just think when they hear two females laughing together, they're more likely to say they're friends. So everywhere around the world they heard the exact same stimulus set, in the exact same condition where it was a computerized experiment where they wore headphones and even out in Tanzania or in Kenya, people would go out there and give them the experiment. Here our
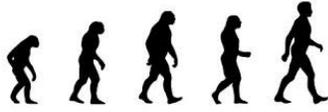
subject is Coren Apicella one of my collaborators and she works at the Hadza. So this is the experimental context you see. Here is in Papua New Guinea, where they would do the experiment with everybody around them— only she could hear it, but they're all fascinated by this. Here's another lady in Papa New Guinea who's doing the experiment. So you can see these people are doing the experiment the same way. Sometimes they had to have the instruct— the instructions are all translated in the experiment but sometimes they had be read to the participants and then experimenter would enter the answer. So, my idea is that laughter potentially in a group, can signal something about the affiliation between the people there laughing together. And so what I'm testing for is how sensitive are listeners in picking up the information about whether two people know each other and using a paradigm we call thin slice, which is you take a very little bit of information— I mean thin slice is usually thought to be like a minute or so. My thin slices are one second and in one second can you get enough information to make an accurate judgment about whether people know each other?

And it comes down to certain acoustic features; laugh speed matters. So faster laughs. If people are laughing faster which is probably correlated with the arousal that's associated with that emotional vocal system that's distinct from the speech system, they detect that. So there are these acoustic features in the individual laughs that actually give it away. So even if people that don't know each other are laughing together and it feels authentic, it could actually still be different and detectable in one second to somebody in New Guinea.

All right, so the final thing. Why do we laugh? So one reason I think is that it's we're signaling cooperative intent. When we're laughing with one another, we are giving some information that's similar to the function that you see in nonhuman primates and other mammals that do this play vocalization behavior. They're communicating something about their intent to engage in future interactions in a positive way and when humans laugh together they are also engaging in these potentially positive signals that are helping you develop a relationship for later. And continuing to do it strengthens emotional connections and that's why you laugh best with some of your oldest friends and you're strengthening these bonds. It's also, I think, a way to signal decryption of indirect language. So you can reveal that you have some information that is implied and that helps you maybe then recognize who is in your group and who isn't in your group, who has certain information and who doesn't.

It also, I think, can signal an affiliation to over-hearers, so when a group of people are laughing at the bar, you all know they're buddies and that might help you assess them as a group people that you might have to do with later. And that can also be something that is aggressive. So you have a bunch of guys are wanting to find another group of guys and they're all laughing. That could be intimidating because you're recognizing they have some connection and they're laughing about something which is an honest signal that they're sharing information on some
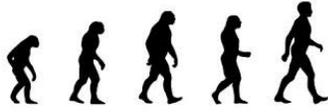
level. It also is in conversational turn taking and coordination. So, I have other work showing that people that laugh more in conversation end up coordinating their speech rates more, which then is associated with a more greater likelihood to cooperate in the behavior economic game. So when people are talking at the same speech rate, if they converge in their speech rate, then they are more likely to actually cooperate when you say, "You know here's the situation where you can give money or take money" and laughing plays a role in that. So I think there's an important role there and finally there's the evil side of it which is social manipulation. People can try to laugh and try to gain your trust. The car salesman, "Ha-ha-ha, you're so funny," and really what he's trying to do is make you trust him more and then when it comes down to signing for the car you like, "This guy thinks I'm funny." So we're manipulating each other and in the rule of animal signaling that's what signals are. They are designed to manipulate the behavior of other organisms. That's the general definition of a signal and laughter is no exception. We are manipulating one another. Sometimes it's for our own mutual benefit and sometimes it's not. So that is the end. I think we're going to have time for questions, but thank you for your attention. Here's my list of collaborators and this was good. I like the questions, too.

Meredith Johnson
Thanks for listening to this Being Human episode of Origin Stories. If you are in the San Francisco bay area, please join us for our next Being Human event. They are lots of fun. So go to leakeyfoundation.org for more information. That's L-e-a-k-e-y foundation.org.

The Leakey Foundation is a nonprofit organization that funds groundbreaking research in human origin, evolution, behavior and survival and we have some exciting news. The Leakey Foundation is an official charity of the 2016 San Francisco Marathon. So if you're a runner, we want you to join our team. Team Leakey is running to raise money for a scholarship program to help send students from developing countries to field schools, where they can learn the skills they need to start a career in science. We have lots of great benefits for our team members. If you sign up with Team Leakey, your marathon entry is free, plus you get a cool team t-shirt, a team lunch the day before the race, personal training advice from Dr. Dan Lieberman of Harvard University who is also on the team, all while having fun and raising money for a great cause. Learn more and join Team Leakey at leakeyfoundation.org/team_leakey.

Being Human is a joint initiative of The Leakey Foundation and the Baumann Foundation. Dedicated to understanding modern life from an evolutionary perspective.

We'll be back in two weeks with another episode of Origin Stories. Thanks for listening.

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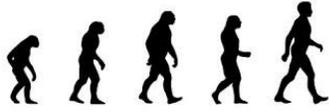
Suggested tags

animal, 2, 4, 6, 11
anthropomorphic, 3
Elke Zimmerman, 3
Evolution, 1
facial expressions, 1
fake laugh, 2, 5, 6
genuine, 3
glottis, 3, 5
gorilla, 4
Greg Bryant, 1
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laughter, 1, 3, 4, 7, 9, 10, 11
Marina Devila-Ross, 3, 5
Michael Owren, 3
nonconductive, 4
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