Video Transcript - Recovering Voices – Sustaining Global Linguistic Diversity

Maggy Benson: Welcome everyone. Thank you so much for [00:00:30] joining us here at Smithsonian Science How? We have a really special guest today. She is a linguist and Curator of Linguistics here at the Smithsonian's National Museum of Natural History. We're joined by Dr. Gabriela Pérez Báez.

Maggy Benson: Gabriela, thank you so much for being here today.

Gabriela: Thank you very much for the opportunity.

Maggy Benson: We've never had a linguist on our program. So we're really excited to learn about what one is and how you study language. So, let's start there by having you tell you us what exactly a linguist is.

Gabriela: Well, a linguist is someone [00:01:00] who studies how humans use language, what diversity exists in the languages of the world, and what that tells us about who are as humans.

Maggy Benson: And so why studying language is important?

Gabriela: Well, because language is quite unique to the human species. There's a lot of information that is encoded in language, information about how human groups have survived overtime, and about how our brain processes language.

Maggy Benson: [00:01:30] So, it seems like we can learn an awful lot by actually studying these languages.

Gabriela: Absolutely.

Maggy Benson: Gabriela, we have an opportunity to have let our viewers chime in with a live poll, so let's tune in to them. Viewers, here's an opportunity to participate in a live poll. Think about what Gabriela has told us about studying languages and tell us: What can we learn by analyzing language? About proper grammar? About brain processes? About structure of languages? Or about the diversity of languages?

Maggy Benson: [00:02:00] We're watching your answers come in live as we state here and we see that 67% of our viewers have responded that analyzing language reveals diversity of languages. What do you think?

Gabriela: Well, I think your viewers are learning quickly about what linguistics is. We, indeed, as linguists, focus heavily on [00:02:30] trying to understand how many languages there are around the world, how they are similar, how they are

different. We don't, so much, focus on proper grammar because what we actually want to do is analyze language as it is naturally spoken and not in any particular style that is prescribed.

Maggy Benson: That makes me feel better about presenting today here with you. It takes a little bit of the edge off.

Gabriela: Sure.

Maggy Benson: So, Gabriela can you tell us exactly what defines a language, or, languages?

Gabriela: Sure, well, language is [00:03:00] the ability to communicate to a group of people in such a way that we all understand a particular message. A language is a particular system in which we use sound or gesture, or both, and we structure elements in such a way that we can communicate a message. The concept of a language is a little bit of an abstract notion because, for example, we can talk about English or Spanish as being languages. But, at the same [00:03:30] time there, are significant differences between the different Englishes or Spanishes that are spoken.

Maggy Benson: So, how many languages are there in the world? Actually, I'm sure you know this answer, but before you tell us let's actually check in with our viewers again. Viewers, here's another opportunity to chime in and tell us what you think. Tell us how many languages are there in the world? Fewer than 20? 100 to 200? About 2,000? Or more than 5,000?

Maggy Benson: So we can see the results again, [00:04:00] and more than 50%, 53% of our viewers think that there are more than 5,000 languages.

Gabriela: Well, again, our viewers seem to know quite a bit about languages and there are indeed not only above 5,000 but we know that there are more than 7,000 languages around the world.

Maggy Benson: Wow, that's huge. So where are all of these languages located and spoken?

Gabriela: Well, they are distributed not necessarily evenly around the world, but we know, for example, that there's huge [00:04:30] density of languages or of linguistic diversity in Papua New Guinea, which is not necessarily a huge area of the world. But there are a lot of different languages belonging to different language families. We know that the Americas has the greatest diversity, meaning that there's the largest number of distinct language families in this continent.

Maggy Benson: So if there's over 7,000 languages, does that stay the same, or are these languages are actually changing with people? I know that we're adding words [00:05:00] to the English dictionary all the time. I mean 10 years ago, I never

would have said, or maybe 20 years ago, I never would have said that I texted my mom or I googled linguistics.

Gabriela: Sure, languages change constantly over time. We, as humans, like to be as efficient as possible and communication is really crucial to our survival. So, we want to as efficient as we can. When we find new ways of saying things or conveying a message, then we might go implement [00:05:30] that strategy, which then gets shared, and we all start using language differently. The reason why we have so many languages is because initial proto-languages, or languages that are more ancient, such as Latin, eventually have changed because of population movements and have given way to many other languages.

Maggy Benson: I'm still trying grapple with the idea of languages sounding different, even if they're the same. So, for example, I speak American [00:06:00] English, in particular. I live in Washington D.C., but the English that I speak can sound different for somebody who may live in the south or somebody that lives in Australia. What defines where language starts and stops, and when it's a new language?

Gabriela: That's a tricky question, and, as linguists, we actually spend a lot of time trying to figure out, is this particular system a dialect of a particular language, or can we consider it a separate language altogether? But, indeed, [00:06:30] what you're referring to with regards to English, probably relates to both the notion of accent and dialect. So, an Australian English might be a dialect of English, just as English from the northeast coast would be another dialect of English.

Maggy Benson: Interesting. So, what about people who speak multiple languages? You mentioned that there are over 7,000 languages worldwide. Does that mean that [00:07:00] it's common to speak multiple languages or just one?

Gabriela: Well, human kind has been multilingual throughout its history, and we still see it today in the world. It is rather the norm to speak more than one language, rather than just one.

Maggy Benson: We see this dog here, (it) looks like he's multilingual.

Gabriela: Yes. What happens is that we might live close to other groups of people who speak different languages [00:07:30] and we'll need to trade with them, cooperate, and that requires that we all speak common systems. Also, there might be cultures that prescribe for example, linguistic exogamy, which means that you need to marry someone from a different language group. (This) means that then your child will be exposed to two different languages. But that child will also look to marry someone in another group and will have to learn another language. And will be playing around throughout childhood with [00:08:00] children who have different inventories of languages in their brains.

Maggy Benson: Can children do that? Do they get confused if they're being around multiple languages at once?

Gabriela: Well, the child's brain has what we call brain plasticity, which means that the brain is shaped as a function of the input, the stimuli that the child receives. So if a child is exposed to two, three, four languages, which is not unusual, [00:08:30] the child will be able to catalog all the input he or she is receiving. (The child) learns how to store it in his or her brain, and also learn which system needs to be used depending on whether you're talking to the mom, or the friend, or the father. So, children are, by nature, in a very good position to learn more than one language at a time.

Maggy Benson: That's really exciting. It seems like we can, and all could be multilingual. Now, what about the argument that everything would be easier if [00:09:00] everyone just spoke the same language. I've heard it before, what are your thoughts?

Gabriela: I've heard before too. And the thing is that it's actually impossible that we would all, 7 billion people speak the same language. And it's simply because of the dynamics of language. The fact that it changes quickly and constantly. So, within a couple of generations, we would all be speaking differently anyway. But the other thing is that, if we all spoke one single system, we would [00:09:30] lose the ability to learn from the diversity, from the different structures that different languages present and from the different information about that particular group that the language encodes. So we would lose a lot of information.

Maggy Benson: Wow. It seems like a lot's at stake, if we lose linguistic diversity and even, just, special individual languages themselves.

Gabriela: Absolutely and again, if we [00:10:00] are not able to see how different languages are structured, we might think that all languages would look the same and that our brain is limited to a particular type of system.

Maggy Benson: So we see a graphic here now that's labeled, Endangered Languages. It looks like there are a lot of endangered languages worldwide.

Gabriela: Yes, indeed. And this is a problem that has emerged over the last couple hundred years, especially. Out of the 7,000 plus languages in the [00:10:30] world today, it is possible that at least half of them will go silent by the end of this century.

Maggy Benson: Wow. That would be a huge loss, considering all that you told that's encoded in a language and it's importance in our communities. So, thank you for giving us an introduction to linguistics and language. We have some student questions coming in. So, let's take a look.

Gabriela: Sure.

Maggy Benson: This one comes in from Vera, why do you study language?

Gabriela: Thank you Vera for that very nice, interesting question. I study it because, again, we all speak [00:11:00] language, or gesture, if you use a sign language and we do it very naturally. But it turns out that the structure of a language is very very complex and it fascinates me that we, as linguists can spend our entire professional life trying to figure out how a particular language is structured. And yet a little child who's two or three years old is figuring it out on the go.

Maggy Benson: Very cool. We have a question from Victor [00:11:30] in Maryland. This one is coming in in Spanish. Remember you can submit questions in Spanish. How about you respond in Spanish and then in English for us?

Gabriela: Absolutely. [Spanish 00:11:39] [00:12:00] For English viewers, the question from Victor in Maryland is, is the internet to be blamed for the extinction of languages? And my answer to that very interesting question is that, the internet is actually more and more being utilized as a domain of use of languages of the world. So we see more and more languages present there, probably not yet at the rate that we would like it, but they're coming [00:12:30] and being displayed in the internet more and more.

Maggy Benson: Great questions. Keep them coming. We have another question but this one comes in by video. So let's have a look.

Karen: At what point is a language considered threatened?

Maggy Benson: That actually was from Karen. And she wants to know at what point is a language considered threatened?

Gabriela: Thank you Karen for the question. Very important question. We consider a language to be threatened once children are no longer using a language as a preferred language. And that is because if it's [00:13:00] not a preferred language when they grow older and have their own kids, they are not going to be using the language with their kids, and then the population of the speakers of the language does not get renewed and starts to decrease.

Maggy Benson: This one's from Jack and it comes in in Spanish.

Gabriela: [Spanish 00:13:18] [00:13:30] [00:13:44] So, the question for our English viewers, is what language have I spoken throughout my life and what languages do I know? And the answer is that Spanish is my mother tongue and I learned English when I was six, and later learned French. So, I'm fluent in those three. I [00:14:00] also study Zapotec languages, and one in particular, Diidxaza. I know it very well. I can defend myself at the market, but it's not yet a language that I can converse comfortably in.

Maggy Benson: Thank you for all the wonderful questions. Gabriela, let's lean more about your research, You just started talking a little bit about the Zapotec language that you study. I know that you do a lot of work in Mexico. Is there a lot of language diversity in Mexico?

Gabriela: There's tremendous linguistic diversity in Mexico. There are 11 language families [00:14:30] in Mexico and each breaks down into a lot of branches. So we have 68 language groups and each of them will breakdown into more branches.

Maggy Benson: So I see Zapoteco. That's one that you study?

Gabriela: Right. So Zapoteco belongs to the Otomanguean stalk of languages in Mesoamerica. It's as huge, similar, you can compare it to Indo-European in that it's a huge group of languages. You can see a branch that breaks into [00:15:00] Zapotecan. Then Zapotecan Chatino which are what we call coordinate branches and within Zapotec, you see Central Zapotec in within it, there's a lot of several languages, and in there is Diidxaza.

Maggy Benson: So you study Diidxaza?

Gabriela: Correct.

Maggy Benson: Now what interests you in Diidxaza? That made you want to study it?

Gabriela: Well, I'm very interested it the sound systems. The Zapotec languages, like, 60% or more languages of the world, are tonal [00:15:30] languages. That means that you can pronounce a vowel at different pitch levels, and that changes the meaning of the word. And also, they have vowel phonation, which means that you can do, you can close, modulate the flow of air with your vocal cords to change the meaning of the word.

Maggy Benson: So, we have a small audio clip here, maybe we can take a listen to see if we can hear what you're talking about.

Gabriela: Sure. [00:15:57] (Audio clip play in Spanish) [00:16:14]

Maggy Benson: [00:16:14] So, I can hear what you're saying, with the changes in tone throughout that brief segment that we heard. And it sounds very foreign to me.

Gabriela: Sure, well, English is not tonal, and English doesn't use vowel phonation in a way to change meaning. Whereas in Diidxaza and [00:16:30] other Zapotec languages, a word like guie, [Diidxaza 00:16:32] with no glottal closure, and guie, [Diidxaza 00:16:35] are two different words.

Maggy Benson: So, what else is unique about Diidxaza?

Gabriela: As a semanticist, I'm very interested in how meaning gets conveyed. And what that means about your brain processes. I'm very interested in how speakers of Diidxaza talk about the space around them. And how they think [00:17:00] about space as well. So, we have an example here. There's a photograph of a chair and a ball. And if I were to ask you, where is the ball, what would you say?

Maggy Benson: I would say, the ball is to the right of the chair.

Gabriela: And that's what most English speaker would say and speakers of Spanish, and Japanese, and Dutch. But speakers of Diidxaza would orient, would describe this in relation to cardinal points, and they would say something like [Diidxaza 00:17:28] which means there [00:17:30] is a ball on the East side, or, to the east side, because they are not orienting space in relation to their body (but) rather they're using a different system. And this is important because up until the 1970s, it was assumed that because of the way our bodies are built, we, all humans, necessarily have to orient space in relation to our bodies. But now, by studying languages like Diidxaza, we have learned that there are other ways of speaking, but also of thinking [00:18:00] about space.

Maggy Benson: That's a really good example of how knowledge is really encoded in a language.

Gabriela: Exactly.

Maggy Benson: So where is Diidxaza spoken?

Gabriela: Diidxaza, as many others Zapotec languages, is spoke in the state of Oaxaca, in the south of Mexico. There are a few Zapotec languages in the state of Veracruz, which you see outlined in the map. And where you see Juchitan, all the way in the south, in the Isthmus of Tehuantepec, is where you find Diidxaza. It is spoken in 22 municipalities [00:18:30] in that region.

Maggy Benson: And how many people does that represent?

Gabriela: So, there are about 70,000 to 100,000 speakers of the language, which makes it the Zapotec language with the largest number of speakers. However, we're finding that children are speaking the language less and less. And at this point, the language is considered endangered.

Maggy Benson: So, what threats to Diidxaza are there posed that [00:19:00] would make it endangered? Why aren't people speaking it anymore?

Gabriela: Well, there's a great deal of pressure to speak Spanish. There are discriminatory practices that make people uncomfortable speaking their own native language. The schools are primarily teaching in Spanish, which prevents children from having enough input in the language, which as I mentioned earlier, is very important. So, those are several factors that are contributing [00:19:30] to the problem.

Maggy Benson: Now, as a linguist, you are working on revitalizing the Diidxaza language, and were gonna learn about how you're doing that in a moment. But we're gonna give our viewers another opportunity to check in with us and tell us: How you would revitalize an endangered language? Tell us: Would you write a dictionary? Would you stop it from changing? Don't let people speak another language? Or respect people's language choices? Tell us how would you help sustain an endangered language? [00:20:00] Our viewers are still voting but 58% say that they would write a dictionary.

Gabriela: Fantastic, that's what I do for a living!

Maggy Benson: Tell us about your dictionary project.

Gabriela: Well, so Diidxaza has had a couple of vocabularies written. One of them by a native speaker and that was in the 70s and I have a, through a project, I got involved in documenting the language. [00:20:30] It is now a dictionary with 12,000 entries. You see one here that documents a verb. It's still in a very technical stage, not terribly accessible yet for non-linguist. But we'll get to that point. And I have worked with about more than a dozen speakers at this point, to try to get their input.

Gabriela: Well, we focused heavily on plants because out of the 12,000 entries, there's about a thousand that are plant-related terms. And [00:21:00] they use to be very messy in the past. We see here a screen about a term, Yaga La Guitu, which I thought referred to one tree. But then, I kept getting a lot of information from speakers that made me think that they were several trees. And so, it took about a year of documentation of the flora, and as many names in Zapotec as possible to try to figure out what [00:21:30] these trees were about. And as we can see, there are several trees with very different properties, but what they have in common is their architecture, how they branch out. And that is what makes them all fall into a category of trees called Yaga La Guitu.

Maggy Benson: So it was kind of that "Y" that we saw in that branch? Interesting and that took a lot of research with a lot of locals and botanists?

Gabriela: Yes. So, I'm linguist so I didn't really know what botanist know about documenting plants. But [00:22:00] I happen to be at the National Museum of Natural History, and I'm very lucky that I can talk to expert botanists who taught me a great deal about how to document. We see Vicki Funk in pink in the photo. And I also work with botanist in Mexico, we see on the left, Alberto Reyes from the National Herbarium in Mexico and there was Kenia Velazco, as well, in some of the photos, who you see there, in pink. We also worked with several [00:22:30] knowledge bearers from the community who generously shared what they know about plants.

Maggy Benson: Now, why did you start with plants? Is there some kind of information encoded in specific plant names that you were looking to get?

Gabriela: Well, I didn't necessarily start with plants. I had already gotten a lot of documentation of all kinds for the dictionary. But plants were not adequately documented. I had things like, well you know, here's the name of a [00:23:00] cactus and the definition was something along the lines of, "it's a cactus that grows in the hills." And. as you might imagine, there are many of those. So we needed to have more specificity which and how many species are named with this particular Zapotec name. And what is important about that plant? Why is that plant named and not others? And that's because there's a cultural relevance, because there has been an important interaction between the society and the plant and that's why it gets a name.

Maggy Benson: [00:23:30] So how are you giving this information back to the community of speakers? You're working on sustaining this language. So how does the community start learning Diidxaza again?

Gabriela: Sure. As you might have seen in the screenshot of the dictionary the documentation with US linguist can be very very technical and we need to tweak it so that it becomes more accessible to those who are not linguists. We have produced materials, educational materials that you just saw on the screen. So [00:24:00] the documentation is presented to the community with a grant from the Smithsonian Institution and with the support of the Recovering Voices Initiative, which is where I do most of my work. We were able to produce these very high quality materials for distribution free of charge to schools and cultural centers in the region.

Maggy Benson: Do you work with the school directly?

Gabriela: I have been able to deliver materials, and some of my collaborators have also helped in [00:24:30] the distribution, and what we just saw is a Bingo game version of the documentation, which, on the reverse, has all of the documentation about the plants. But then children can play and learn about the plants that way.

Maggy Benson: That sounds very interesting. Gabriela, thank you so much for giving us an introduction to your work and how you're working to learn about and sustain Diidxaza. Now, you really sold me on the importance of understanding language and respecting language choice. But is it important for [00:25:00] other non-linguist to really respect language choice and understand how valuable linguistic diversity is?

Gabriela: Absolutely. And in the poll, we had the option of respecting people's language choices. Most people are not linguists and as non-linguists you can actually have a very strong impact in linguistic diversity if you respect the language choices that people make, if you respect what a mother and a child might choose to speak to each other. Because then [00:25:30] that gives them the freedom to comfortably speak that language.

Maggy Benson: So important. So, what's in your future? I know that you are a very busy woman because next week, you're collaborating with the Library of Congress, Recovering Voices program, and the National Museum of American Indian to hold the Breath of Life conference.

Gabriela: Yes, so I'm a core member of the Recovering Members Initiative here at the Smithsonian Institution, which is the institutional response to the problem of language endangerment. And for [00:26:00] us, it's really critical to make our collections, our institutional collections accessible and to work collaboratively with communities in such a way that the resources in the institution are made available to them in a way that contributes to their language revitalization efforts. The National Breath of Life Archival Institute for Indigenous Languages brings community researchers to the Smithsonian Institution and our partners to receive [00:26:30] training in linguistic analysis and carry out hands-on research on archival materials so that they can recover knowledge about the languages that can then inform the revitalization efforts.

Maggy Benson: Sounds like really vital work. In the Recovering Voices program that you work on, what's your work with Recovering Voices initiative in the future?

Gabriela: So, the Breath of Life Institute, this is the fourth year that we're holding it; it's [00:27:00] a priority activity of Recovering Voices. And we also work one on one with communities, groups of community researchers, who we are able to bring to the museum so that they can carry out research either in the collections or the archives. And again, for the purposes of recovering knowledge about their languages and cultures and knowledge systems.

Maggy Benson: Gabriela, thank you so much for helping us better understand your work here today. The last question, Denis, wants to know how [00:27:30] to become a linguist?

Gabriela: Fantastic! You want to become a linguist, come talk to me! So, I think the best thing to do is, if you're in middle school or high school, to start reading about the diversity of languages. There are a lot of resources online. Such as Endangered Languages Catalog that can teach you about that, and then, when you go to college, take a linguistics major.

Maggy Benson: Gabriela, thank you so much for being here today and helping us understand a little bit more about your [00:28:00] work here at the Smithsonian. And thank you, viewers, for all your wonderful questions. Can you tell our viewers where they can learn a little bit more about the work that you do?

Gabriela: Sure, you can learn about the work of Recovering Voices by going to recoveringvoices.si.edu. All the resources coming from the Ethno Botanical research that I talked about is in the National Ethno Botanical Herbarium online which is at neho.si.edu and you can learn about the National Breath of [00:28:30] Life Archival Institute at nationalbreathoflife.org.

Maggy Benson: Wonderful, thank you so much for being here today, Gabriela.

Gabriela: Thank you for the opportunity.

Maggy Benson: You can find all of those resources also on qrius.si.edu. Thank you so much for being here today. We hope that you join our next broadcast. If you miss part of this broadcast, it will be archived later this evening at qrius.si.edu. We hope to see you next time on Smithsonian Science How?