This is a transcript for Lingthusiasm Bonus Episode '103 ways for kids to learn languages'. It's been lightly edited for readability. [Listen to the episode here.](#) Links to studies mentioned and further reading can also be found on the show page.

[Music]

Lauren: Welcome to Lingthusiasm, a podcast that's enthusiastic about linguistics! I'm Lauren Gawne.

Gretchen: I'm Gretchen McCulloch. In this Patreon bonus episode, we get enthusiastic about reading a lot of papers about how kids learn language. But first, it's our anniversary!

Lauren: We've been making Lingthusiasm for six years. Every November, we like to celebrate.

Gretchen: We like to celebrate by helping people find Lingthusiasm who would totally be into a podcast that's enthusiastic about linguistics, they just don't know it exists yet.

Lauren: If you have a favourite episode of Lingthusiasm you'd like to share with someone, or you enjoy sharing your favourite facts from the show, if you do that publicly in November and tag us in, we'll thank you, and if you do it privately, then please also accept our thanks.

Gretchen: We've done this every year for our anniversary, and we always see in the status that your recommendations really do help more people find the show. People mostly find podcasts through word-of-mouth. You can help someone find a new show that they might like.

Lauren: We are double celebrating our anniversary with a listener survey this year for the first time.

Gretchen: This is your chance to tell us what you're enjoying about Lingthusiasm so far and what else we could be doing in the future.

Lauren: Including suggesting topics.

Gretchen: We also couldn't resist the opportunity to add a few linguistics experiments in there as well. We'll be sharing the results of those next year. We might even write a paper about the survey someday, so we also have ethics board approval from La Trobe University for this survey.

Lauren: I like to bring my day job into the show from time to time. We'll have a link to the survey. We'll have a link to the ethics board information as part of that as well on the Discord as well as in the show notes for this episode.

Gretchen: To do the Lingthusiasm listener survey or read more details about what it's about, go to bit.ly/lingthusiasmsurvey22 – all one word, no capitals.

[Music]

Gretchen: This time last year, I read a really interesting linguistics paper that looked at all of the articles that had been published in the four biggest child language acquisition journals about how kids learn language and tracked how many languages were represented by this list and

how many papers were written about each language that people were trying to analyse how kids were learning.

Lauren: Ooo, I love a big meta-analysis survey paper.

Gretchen: This paper was by linguists Evan Kidd and Rowena Garcia. They looked at, okay, what have people done and, unsurprisingly, they found there's a lot of English in there.

Lauren: Hmm, that does not surprise me. I feel like it's a lot of English, a lot of other big languages we might expect, and then very quickly trailing off to – how many languages in total were there?

Gretchen: There were 103 languages in total. A lot of those languages there's, like, one paper maybe two papers about that language in those particular journals, and some of them there's maybe half a dozen. The Indo-European languages are obviously very over-represented in this group, although even there there's some languages that have only one or two papers. Outside of that, there's some languages that are also really big – so Japanese, Mandarin Chinese, Hebrew, those are some of the big non-Indo-European languages that have a lot of papers about them. Then within Europe, stuff like Spanish, French, German, lots of papers. Less stuff on Latvian or Punjabi. There's this interesting distribution in terms of what's there, and they found that the situation has been getting better. The number of papers that are in English have been increasing only linearly, but the number of papers in other languages have been increasing exponentially. We're making some progress towards narrowing that gap, although it's still a pretty big gap.

Lauren: It's so nice to have really clear numbers on how much work needs to be done to understand how children learn a whole range of languages because that's 103 out of the 7,000-odd languages in the world – but quite a tour between those 103 languages, I imagine.

Gretchen: Right. Something that I've thought about for a long time which is what would the field of linguistics look like if many of the early linguists hadn't been English speakers or French or German speakers or speakers of few major languages and coming into that with their preconceptions about this is what language is the way I know it and learning other languages but still coming in with this basis on the languages that they're already super familiar with – what would a field look like like that? And so, when I saw there's 103 languages, I also was reminded of a Twitter hashtag that some linguists use for paper-reading projects where they'll try to read 100 papers about linguistics over the course of, say, a year. They'll tweet about them reading it, and it's sort of a way to have some discussion about the papers, and have some, maybe, accountability for what you're doing, and other people are involved in making this project more social, and a way to try to read more papers and have a reason to read more papers and remind yourself to read more papers in a given year. I thought, "Huh, 103 languages is really similar to this 103 papers project that people do when they're trying to read more linguistics papers."

Lauren: I've really been enjoying this series you've been doing under the #103papers hashtag, and I hadn't realised that's why the specific number, 103, was your choice of target. So, you picked one paper for each language.

Gretchen: Exactly. I also thought this would be a really interesting way of counteracting some of the bias of like there's over a thousand papers about English, and I'm still picking one. I'm not ignoring English. I'm giving English exactly the same about of attention as I'm giving all these languages that have one paper about them. A way of counter-balancing that – because that means that these languages that have one paper written about them in any of these four journals over the last 50, 60 years have the exact same amount of attention paid to them as a language that's had literally thousands or hundreds of papers written about it. It's a way of getting a perspective on the field that has still not an entirely un-skewed look. Because there's some language families that have one paper written about one language in the entire sample, right, and there're lots of other languages in that family and, yep, hmm, they're not there. There are some languages that sneak into other papers, and English is pretty good at this one like, "Oh, yep, we're gonna compare this language to English, again," whereas sometimes other languages only appear in the context where they're being compared to either a globally more dominant language or a locally more dominant language. But at least it gets this perspective of like, "What if the field had been more balanced from the beginning? What would it look like to give a similar amount of weight to each of the different languages in this possible sample?" I also thought, you know, when we're talking about redistributing attention, you know, people follow me on Twitter. If I tweet about each of these papers, then it might be possible that some people might read the abstract, or read my little summary, or follow the link to the full paper, and read that paper themselves or cite that paper. I actually heard from a linguist who said, "Huh, I think I'm gonna redesign an assignment for one of my courses around doing something like this." I'm not somebody who's going out and doing this research myself, but maybe I can help by bringing attention to the portions of it that are less equitably distributed.

Lauren: As someone who always has greater reading aspirations than I have time to allocate to it, I really appreciate when people do this service of summarising papers that they've read whether it's using one of these hashtags or just summarising a paper they've read or a paper they've just published because it can help you find papers that are relevant to your interests. It can help you find papers that are novel or different or help you feel like you're at least vaguely keeping up with what's happening in other fields as well.

Gretchen: Yeah, and as somebody who's not an academic, I hear from a lot of people who are linguists who say, "How do you keep up with what's going on in linguistics outside of academia?" One of the things that I do is be on Twitter and see people's new papers. That's how I found out about the Kidd & Garcia paper in the first place, that did this survey, and hopefully maybe a few people will click through to some of the papers that seem interesting about topics that they're interested in.

Lauren: Now, we don't have time to talk about all 103 papers today.

Gretchen: You mean this isn't gonna be a 10-hour episode?

Lauren: I thought we would just pick some of the papers that caught our eye or that were particularly memorable for some reason and share what we learnt. I've read some of the papers that really caught my attention from your list, so yeah.

Gretchen: So, I'm already succeeding in getting people to pay more attention to them?

Lauren: Already succeeding, for sure.

Gretchen: Amazing. What was the first paper that caught your eye?

Lauren: I'm always torn because inside of you, there're two wolves. There's the wolf that wants to read about the languages you're already familiar with and see what cool things happen in those, and there's the wolf that wants to find papers that are about languages that are so far out of your own experience that they're really, really novel to you. But the first wolf won out.

Gretchen: This is really relatable, yes.

Lauren: It's the same as like, "Do I go with my favourite ice cream flavour or try a new one?"

Gretchen: Okay, yeah.

Lauren: And so, I gravitated towards a paper on Nepali, which is a language I have learnt as an adult, because I wanna see what happens when the kids learn it.

Gretchen: Yeah, that makes sense to me.

Lauren: This paper is about a feature of the sound system of the language and how parents use it when they're talking to their children that, as a non-native speaker, I find really challenging because in the stop sounds, so like where we have /t/ and /d/ – we have two-way contrast – Nepali, like a lot of languages in that area, has a four-way voicing contrast. I think we talked about Nepali and maybe Hindi in our voicing episode really recently. So, where we just have maybe /tæm/ and /dæm/, they have /dɑm/, /dʰɑm/, /tak/, and /tʰam/, so they have a four-way distinction using the words from the paper.

Gretchen: I can convince myself that I'm hearing a distinction here because I'm seeing them written out as you're saying them but, depending on whether Lauren has done a good job with the accent, which I really can't vouch for, you may or may not hear a four-way different distinction there.

Lauren: I mean, there's a question of whether I'm doing the pronunciation right, but there's also, I know that I really, really clearly articulate them when I need to know that I hear them. I thought that maybe parents would do the same thing to their children when they're learning Nepali so that the children could learn this four-way distinction as well, but in this paper, it turns out that the parents, if anything, they articulate the differences between them even less clearly when they're talking to children than when they're talking to adults, which, as someone trying to learn this twice as many distinctions in a space where I only have two and they've got four, seemed completely counter-intuitive to me.

Gretchen: It's one of the things that goes to show that the types of things that kids find easy and find hard are not the kinds of things that adults find easy and find hard, which is something that keeps coming up.

Lauren: Because children learn this, and Nepali continues to maintain a four-way distinction, but the parents, when they speak to their children, the way that parents address children

focuses more clearly on having really prominent vowels. They over-articulate the vowels, and that means that they tend to under-articulate the consonants that go around them.

Gretchen: Well, and this is one of the things with kids learning languages when you're a newborn, if you have typical hearing, you can hear the difference between any sounds that are relevant for any languages, and then you lose that when you stop being exposed to that particular contrast. You don't really need to produce these extra clear versions for six-month-old Nepali kids because they're just like, "Yeah, I've already got this. It's fine. I'll just keep it because it seems relevant here." Whereas for you who's had a few decades of like, "Yeah, this distinction isn't relevant to me, I've lost the ability to perceive the difference," then you have to pay very close attention and hyper-articulate everything in a way that the kids just don't need.

Lauren: Part of understanding how children acquire language is looking at what the children do, but there is also a lot of research in this paper and in other papers in your survey that looks at how parents talk to children.

Gretchen: Absolutely. Because partly we can't necessarily tell what's going on with kids before they start talking because we can't analyse the things that they're not saying yet. We can try to analyse what they're paying attention to before that, and people do, but another way of trying to analyse that is to say, "Okay, well, they must be doing it based on this experience they have, so if we fully document the experience, then maybe we'll figure out what the input conditions are that make them able to learn those things." One of the other things I liked about this study was a very stray comment on methodology which was, "Participants were compensated for their time." This is pretty normal. Often, participants get paid some amount of money to participate in a study. "And a balloon animal was presented to the infant."

Lauren: How charming!

Gretchen: And I just, you know, often, infants get a little toy or a little picture book, but this balloon animal raises questions in my head. You know, did they have somebody who worked in the lab who was good at making balloon animals was like, "Yeah, I can make the kids balloon animals"? Are these a choking hazard for the kids? Did they think about this?

Lauren: I really like their commitment to research transparency in that they told us exactly what toy the child got.

Gretchen: Right. Because a lot of these studies will just say, "A toy was given to the kids," and you're like, "Okay, that's fine, I guess." But specifically which toy I feel like I appreciate.

Lauren: I also found this paper interesting because even though it is about Nepali, it's research that was done at a lab in Sydney, Australia.

Gretchen: And that's a thing that shows up in a number of languages where sometimes the only paper that's about a particular language will be done in a migrant context in a major city where people speak English, and they'll be like, "Well, we brought these people from this community into the lab because there were enough of them here that we could do this particular study." It's really interesting because, on the one hand, the migrant context is a really real context for a lot of languages. People do speak a language, move around to other parts of the world, still speak

that language with their kids, the kids speak it to some degree as well, but on the other hand, if this is the only context in which we have research on a particular language, it is a bit different from what it would be like learning that language when it's also the language of the entire community around you.

Lauren: It's also a good reminder that you don't have to take yourself somewhere different to research languages beyond your own personal experience and that you can collaborate with community groups that live in your area as well as travel into the areas that people speak different languages.

Gretchen: Other papers where this happened – the Punjabi paper, the Samoan paper were also studied. The Samoan paper is out of New Zealand. There's a lot of people who speak Samoan who live in New Zealand. They did some research with Samoan participants from the community there. So, thinking about what local communities are that might be different in different areas depending on what groups have been centres for migration from different places. It's also an example of how the history of a language and its contact with things influences what kinds of things it potentially gets researched about. There's a paper about Romanian that is a foster care study – how well do kids learn Romanian when they're in foster care versus when they're in an institutional orphanage?

Lauren: Right.

Gretchen: The situation and the, sometimes, terrible conditions in Romanian orphanages made a lot of news for a while. People did some studies about this. And yet, it's got this interesting complexity because this would be a difficult study to do in certain areas and, I think, was one of the things that contributed to people saying, "We need to close orphanages because kids really don't learn languages well in them." This particular study, the ethical way it was designed was, yeah, okay, some kids are randomly assigned to be in the orphanage and to be in foster-case, but if there's an opportunity to adopt-out the kids that were in the orphanage into a family because there just weren't enough at the beginning of the study, then they take that opportunity even though it might make the data a little bit more inconsistent because it's not ethical to deprive kids of language.

Lauren: It reminds me a lot of another paper that I read which is a paper on a child who uses home sign, which is something that arises in a situation where a child is born d/Deaf or with really severe hearing loss to a household that is a spoken-language context, and for reasons in that context, the child is not given access to a signed language and may be given access to something like a hearing aid, which doesn't always have the best uptake in terms of ability to learn a spoken language. So, these children are raised in a really socially engaged living environment but without necessarily having a language they have a lot of access to. This paper is from 1990, and it's always hard to read a paper that's now a few decades old. We know that this isn't the best environment to raise a child in. Not a lot of information is given about the social context of these child. The authors are very clear to point to this is not the same kind of actual neglect, language deprivation, like you see with, I think, Genie was a very famous case of a child who was kept in a room away from other people and acquired no language ability. These children are very heavily socialised into a really normal family life but aren't given a signed or a spoken language.

Gretchen: It is tricky because these days the things that we think about when it comes to sign languages is like, yeah, kids need access to language and need access to language in a format that they can actually comprehend and take in as input. But I feel like it was papers like this that established this was important because you could maybe believe if you were somebody in 1990 that teaching your kid to lip read would help them get along in an inaccessible, audist society and that this was the way to get them to be very good at lip reading when it turns out that not giving a kid a foundation in a language that's accessible to them is not great for this cognitive development. But it's papers like this and research like this that takes advantage of the fact that people have done stuff like this to say, "Yeah, actually, this is a practice that we don't recommend."

Lauren: Just to be very clear, the authors didn't construct this social dynamic or tell parents to not give their children access to a language. This isn't them creating some kind of forbidden experiment in not exposing your child to language. But it is them saying, "Look, this situation is here." This is work from Susan Goldin-Meadow that she started in the early '80s. She's like, "I'm gonna do this work since the situation has arisen, and we can use it to learn just what children are doing."

Gretchen: Right. What are they doing?

Lauren: It turns out that they definitely don't have the level of linguistic sophistication of a child who would've had exposure to a signed or spoken language. We do know that children need input. They need people communicating to them in a modality that they understand. But even in this context where the family work out this kind of system of gesturing to communicate, the children are doing something that creates more complexity than the input that they are being given for the gestures. The parents' gestures are much less structured and consistent than the children's, and the children seem to be creating something that is not a language but much more linguistic than the gestures that they're given.

Gretchen: That's how you end up with situations like when you have a bunch of d/Deaf kids together at a school – a sort of famous example is Nicaraguan Sign Language – that they can take these varying sorts of input and put it together in something that is a language because there's several of them, and they're able to give each other those levels of input there. Nicaraguan Sign Language – this is a good example of something that's a very classic child language acquisition study that there weren't any papers about in these particular journals presumably because the people who were publishing papers about them have decided to put them in other journals that are not specifically child language acquisition journals but perhaps are, you know, sign language journals or language development journals or other types of journals about phonetics or phonology or various types of syntax, various types of topics in the papers.

Lauren: Right. I've seen papers from Susan Goldin-Meadow – actually this was about a child named David. He pops up in a whole bunch of her studies. I was like, "Aw, hi, David! It's good to see you here."

Gretchen: "It's my friend, David." I mean, this paper is from the 1990s, the work was from the '80s, David's probably a 50-year-old man now.

Lauren: Yeah, a middle-aged man going about his life. He and a cohort of home signing children – those papers would've appeared in child language acquisition journals like this but also in psychology journals and gesture journals and sign language linguistics journals, potentially. This was an ongoing project. The Goldin-Meadow lab still does a lot of work with both the historical and contemporary examples of home signs that have emerged.

Gretchen: Speaking of the things that are familiar, the tools of the familiar language and the less-familiar language, I was attracted to a paper that was coming out of Montreal by some researchers at McGill which was doing this very Montreal study of analysing three different languages in two different configurations. It was a parallel study of two groups of bilingual kids.

Lauren: Okay, very Montreal.

Gretchen: And they had one group of kids who were the hearing children of d/Deaf parents – at least one parent was d/Deaf – and so they were learning LSQ, which is "Langue des signes québécoise" or "Quebec Sign Language."

Lauren: Ooo, we're gonna stick with the manual modality – excellent.

Gretchen: Yeah. They were learning LSQ and French – hearing kids with a d/Deaf parent. So, they're learning LSQ from at least one parent. They're learning French from broader society – day cares, maybe. They're preschool age. And then another group of French-English bilinguals who are in hearing families, hearing kids, learning two languages, which is very common in Montreal. So, they were able to compare specifically bilingual kids in what they call "bimodal bilinguals," so one language that's signed, one language that's spoken, with "uni-bilinguals" who are learning two different spoken languages.

Lauren: I guess this was one of those many examples of English and French getting sneaky cameos. You were trying to find a paper on LSQ, and these two came along for the ride.

Gretchen: Right. This is the only paper about LSQ in the data set. And it's a paper on LSQ that compares it to extremely well-studied spoken languages, which on the one hand is super interesting because you can say, "Oh, if we're going to analyse kids learning a signed language, we should compare them with other bilinguals. We shouldn't just be comparing them with monolingual kids." On the other hand, it's like, "Yeah, okay, so even if this paper counts as 'the LSQ paper,' maybe this paper could count as 'the French paper' and count as 'the English paper' as well. Now, I only have to read 100 papers not 103 because I just got two for free," which I didn't do, but it's sort of –

Lauren: Very tempting.

Gretchen: It's sort of tempting. It's sort of saying, okay, certain languages can sneak in an be over-represented even as a paired language or as a comparative language, while other languages are only or primarily studied in their relationship to other languages.

Lauren: I feel like minoritised languages – like LSQ, like a lot of languages in parts of the world that I work in – when you're trying to publish work, there's often this like, "Yes, but how does

that compare to the dominant languages?" And no one ever goes, "Yes, but how does English compare to Nepali?"

Gretchen: Right. Like, "Your paper about English, I think it needs a control group where you talk about also how this happens in LSQ or Nepali." That's not the thing that the reviewer says. They say instead, "Your paper about LSQ or Nepali, how does it compare to, for example, just to pick a random language, English?"

Lauren: Hmm.

Gretchen: Hmm. There's that part. There's also the part where, like we were just talking about d/Deaf kids getting deprived of sign languages by hearing parents who are like, "Yeah, I want my kid to function in a hearing world and not necessarily to have access to language in a format that is fully realisable for them." But here, this is a study actually of hearing kids of a d/Deaf parent who are acquiring LSQ for free in a way that probably many d/Deaf kids would like to be able acquire just because there is that asymmetry with some d/Deaf people have hearing kids and a lot of d/Deaf people have hearing parents. The patterns of intergenerational transmission where you acquire language from your family gets kind of disrupted in many cases for sign languages because they're not necessarily the same experience in terms of deafness when it comes to an entire family. There's these very few – 10% of families where the kids are d/Deaf of d/Deaf, and they're acquiring their sign language in this very direct way from their parents. They get really overstudied in some cases even though sign languages are under-studied themselves because these are the ones that are the most directly comparable to the spoken languages that get acquired from your parents when there's this other type of situation where people are acquiring sign languages from a school or from some peers or from summer camps and all sorts of things that bring in other d/Deaf people to hang out with and learn language from.

Lauren: When it comes to bilinguals, we know that children can acquire two or more languages, and they do so successfully and competently in many different combinations of languages in many different parts of the world. Were there any noticeable differences when those two languages were in two different modalities, or did things pan out the same?

Gretchen: No, it was really the same developmental milestones. Like, they hit the first words within the same range of ages, the 50-word stage at the same range of ages. They had similar sensitivity to who they were talking to. It was quite a neat study. They had the kids come into the lab and talk with their – most of the kids had one parent per language. So, they talk with their parent who had the one language. They talk with their parent who had the other language. And then they would talk with a researcher who was presented as only knowing one of the languages, and then a different researcher who was presented as only knowing a different language. So, it would be a stranger who was presented as speaking that language. Then they'd have a group situation with all four people, and they keep track of which language the kid used to address with person with.

Lauren: Very elegant.

Gretchen: Which looks very complicated to code, but it was super interesting. They found that the kids were sensitive to who they needed to address in which language, and their rates of

addressing a Francophone in English were lower than addressing an Anglophone in English or a Francophone in French or, you know, "I know this person's d/Deaf. I'm gonna address them in LSQ." They were really sensitive to that. But they also had preferences that were individual differences. The kids that did more code-switching or language mixing were more likely to do it when their parents did it more. It's not just like, "Oh, I'm mixing up these two things that are presented to me as these two separate things." It's like, "No, I'm participating in a language practice that my language community is doing. I have role models who use these two languages together; I'm gonna do the same thing." The code-switching itself is not just a switching, it's a combined language thing that's already part of the speech community. They were more likely to do it when their parents did it. And the kids had language preferences. Depending on whether they were attending French day care, or they were staying at home all day with one of their parents who used whatever language, they tended to have a sense of language choice or a sense of which languages they liked more or were tended to default to that was child-specific and individual-specific. They already had a sense of which things they were into, and the dynamics of that language within their community.

Lauren: Sometimes, it's good when a study shows the ways in which signed language acquisition are distinct from spoken language acquisition, so we can see what is general to the process of learning a language and what is, maybe, specific to the spoken or signed modality. In a paper like this, it's really exciting that actually it doesn't matter which languages you're learning, when you're in this multi-lingual or bilingual environment, there's no hinderance to the two languages being spoken or no hinderance to the two languages being different modalities. That's really encouraging.

Gretchen: It's a handy rebuttal to the people who are sort of like the home sign parents of saying, "Oh, but if I want my kid to end up being able to speak or function in a world with lots of people who speak, won't it be better if I don't get them confused by exposing them to sign languages?" Like, no, no, no, no, no. They'll do better a.) if they get exposed to a language they can actually access, and b.) they'll do just fine at being multi-lingual even if the parents themselves don't have experience being multi-lingual.

Lauren: I like that that paper was about the way children are given a language and socialised into a language and how that reflects in their individual preferences and the way they go about speaking and socialising in their world.

Gretchen: There's another paper which is also a part of a whole research programme because one of the cool things, of course, about reading 100 papers is beginning to see how they connect to each other and which things keep getting cited of like, "Oh, I read that one last week." One of these papers that I didn't read for the sake of this that keeps getting cited is a whole strain of research by Bambi Schieffelin, who researches the Kaluli language, which is spoken in Papua New Guinea, and which is very, very famous in this area for being a language where the adults don't talk to the kinds until the kids started already talking.

Lauren: Yeah. Which makes sense. What do kids have to say back to you?

Gretchen: Right. You might as well be talking to your fridge. The fridge isn't talking back. I mean, unless you have a smart fridge, I guess. Also, they don't use any sort of baby talk. They

just talk to the kid once the kid has decided to join this communicative practice, and they don't bother talking to them beforehand. But this isn't a case of language deprivation because they're still talking around the kid. They're living in communities where they're talking to maybe their older children or other people in the community, you know, cousins. They have a very social structure. This isn't an isolated, nuclear family situation where it's just you and the kid at home, and if you don't talk to the kid, the kid isn't getting any language. There's lots of people around to talk to. The kid is exposed to a lot of language. But none of it is addressed to the baby until they've started saying some words.

Lauren: I think "input" has been a bit of a running theme of the technical term of the exposure that children get to language. I always like the Kaluli paper because it's broadening the definition of "input" as in it doesn't just have to be pointed at the child.

Gretchen: Right. I think it's also relaxing because sometimes you get discourse around like, "Oh, should you be using baby talk to address a kid? Should you not? Will this harm their development? Is it good for their development?" The answer is like, "It's kind of fine." Just very relaxing because there's a lot of things that are very stressful about raising a kid, I understand, that you're gonna do this, and it's gonna mess it all up. But this one is like, well, they should get some exposure to language, this is true, but if you do it in a high, cutesy voice, and if you don't do it in a high, cutesy voice, you know, either is fine.

Lauren: They'll be fine. They'll be fine.

Gretchen: But the really interesting thing about this paper – there were only two papers about the entire Trans-New Guinea language family, which is one of the language families in Papua New Guinea.

Lauren: Isn't that one of the biggest language families in the world?

Gretchen: Yeah. It's the third-biggest language family in the world. Papua New Guinea is the place in the world with the most languages. It's got like 1,000-plus languages. This is one of its language families. It has others, I gather. But this is one, and it's very large. We had two papers about languages from this family. Also, there's been some papers in other journals published about Kaluli. I mean, there's a book about Kaluli as well. I thought, "Oh, well, you know, Papua New Guinea – famous as a place where they don't use baby talk. I'm gonna read this paper about Huli, which is a different language in Papua New Guinea. Maybe they will also not use baby talk because maybe this is a thing that they do or don't do in New Guinea."

Lauren: Is Huli nearby Kaluli? I just wanna be able to say them both in the same sentence. It's very satisfying.

Gretchen: Yeah. According to the paper, they seem to be neighbours. There isn't a map. I don't know if they're directly beside each other, or they're in the same general area. But they're not on opposite sides of the island from what this paper says. Yeah. It turns out Huli uses so much different child-directed language.

Lauren: Amazing.

Gretchen: They have a whole system of additional baby talk synonyms that are only used with kids and that the kids use, and they learn early, and they're easier for the kids, I guess, or they're considered useful for the kids.

Lauren: I love a language with special baby talk vocabulary. I mean, we almost have it in English when you think about, like, dogs get called "bow-wow" or sheeps get called "baa" or, I guess, like, saying, "Daddy," instead of "Father." But we use those words in other contexts as well.

Gretchen: Right. Sometimes, kids will make up sort of their own word or something. Sometimes, kids will say like "baa-baa" for "bottle" or something, but that still both begin with B. They have this sound similarity to them.

Lauren: It's not a thing that the whole community recognises. It's just a family-specific thing.

Gretchen: Or sometimes kids will invent a word for a thing, and it's like, "Oh, yeah, this is what we all call 'mac-n-cheese' now because the kid started calling it whatever." But these are community words. They're really phonetically different. The word for "water" in adult Huli is "iba." The child form is "dada."

Lauren: Okay, they're nothing alike. I can't even draw a link between them.

Gretchen: They both end in A, but a lot of words in this language end in A. That doesn't do much for you. The word for "sun" in the adult form is "ni"; the child form is "aba." Again –

Lauren: How many words in the study are given?

Gretchen: This paper has 43 examples of words that have unique child forms in the language. Part of it is, like, some of the child forms collapse a distinction that's made in the adult's. One that I think is really great is that the child form for the word for "fire" and the word for "snake" and the word for "danger" in general is all /nẽ/.

Lauren: That's very good. I'm guessing that a lot of the words have to do with animals and people and body parts and food and stuff that children interact with all the time.

Gretchen: Yeah, stuff that children interact with all the time. Again, prohibiting your children from burning themselves in the fire or approaching the snake, which seems like a very good idea, why not just have one word that means, "No! Stop! Don't do that! Danger!" The thing that is interesting about this study of Huli is that Huli also apparently has a whole bunch of different registers with elaborate synonyms for other types of society functions.

Lauren: Okay, so this is a thing they're really into doing in general.

Gretchen: Right. They also have this different vocabulary for when you're hunting because this is the thing you do when you're hunting. Or they have gender differences in vocabulary that you use in different environments. They have these different varieties that are used in poetry because they have a very complex poetical system, and they have these nursery rhymes for kids and stuff that introduce them to the poetry system that has all these synonyms for things. They might have five different poetic synonyms for "cloud," and the point of doing the poem is to use all of those five poetic synonyms for "cloud" in the correct order. This is a beautiful and

interesting thing you can do in a poem. Part of teaching the kids, "Oh, yeah, there's multiple words for everything" is that in the whole oral literature of the culture, there's multiple words for things, and this is really culturally important. The Kaluli don't seem to have this either. They don't seem to have this tradition of synonymising for cultural, rhetorical, literary purposes either. So, not using a different baby talk register is part of not having this system of using lots of synonyms for things.

Lauren: And definitely a really good lesson for us to not generalise from one particular language to the rest of the family, and why it's really important that the work of diversifying the languages we study continues beyond just these 103.

Gretchen: Exactly. The Kaluli paper gets cited a lot. This paper doesn't seem to get cited as much, partly because maybe it's showing the opposite of the Kaluli paper and people know that baby talk exists. But the fact that these two spectrums of language experience or ways that people approach kids in learning languages exists even within the same language family, even within the same island, is something that like, what about the other thousand languages on Papua New Guinea? Uh, we dunno.

Lauren: Another language family that seems to have a good spread but is maybe a bit imbalanced in how it's represented in a survey like this is the Sino-Tibetan language family. There're five papers from that family, but three of them are from the Sinetic part, which is the "Sino" part of "Sino-Tibetan."

Gretchen: In that we have Mandarin, Cantonese, and Minnan.

Lauren: Then we have Lisu and Chintang from the other half, which is the Tibeto-Burman side, except that that side has maybe 450 languages, and the Sinetic side has, hmm, 25.

Gretchen: Oh, boy, okay. That's an imbalance based on where you have access to the types of resources that you can do these studies in.

Lauren: And the kinds of research that people in different parts of the world have been interested in. As soon as I saw the Chintang paper, I was like, "Ooo, this is gonna be a paper by Sabine Stoll!" And I was not incorrect.

Gretchen: It's really interesting how so many of these projects on lesser-studied languages get driven by one person or one research group. There's a bunch of people who work on them, ultimately, but there's a certain amount of like, "This needs to happen. I'm going to build up a team that could work on this."

Lauren: And in much the same way that Susan Goldin-Meadow has driven almost all of the work on home sign, especially in the '80s and '90s, Sabine Stoll has been doing this long-term documentation of how children learn Chintang, which means that there're lots of papers –both about child language, about Chintang in general – that have all come out of this work. This paper in particular was looking at how children and adults use nouns and verbs, and how many they use, and whether the number of nouns and verbs children use changes over a multi-year period between 2, 3, and 4 years of age.

Gretchen: The finding there is that Chintang kids produce way more nouns compared to verbs than the adults do in their input and that this levels off around age 3, which is around when the kids also start producing all of the complex morphology that's on the verb. So, Chintang verbs have lots of prefixes and suffixes and stuff, I guess.

Lauren: Chintang verbs have amazing morphology. The verb paradigm that they show as an example in this paper is just a massive table. There's so many bits of morphology happening. It's famously complex for this part of the world. It seems to be that children wait until about 3 when they've really got a handle on it to start producing lots of verbs.

Gretchen: Great. Whereas adults who know how to produce these verbs use the verbs a lot because the verbs are doing a lot because of all the morphemes on the verbs that are contributing to all this other information that they have. I think the prior findings around kids using nouns and verbs is like, in English, kids tend to use a lot of nouns first, but also, English parents and caregivers tend to use more nouns when talking to their kids.

Lauren: That's generally true of European languages which has created this early belief that maybe that's what children do in general because nouns are there, and they're things, and they're concrete.

Gretchen: Then there's a second wave of research where you have Mandarin kids, and there's a few other languages where they really tend to use verbs first, but their caregivers also use more verbs than nouns because a lot of these languages you can drop the nouns, the subject, or the object and you figure it out by context. Their caregivers use a lot more verbs. The kids do what the caregivers do and use a lot more verbs. But this is a really interesting case of the kids not doing what the caregiver's doing for, we think, language-internal reasons.

Lauren: It just adds another layer of complexity. The thing I really like about this paper is it's not like 20 years ago when Stoll started this project. She was like, "I'm gonna go in specifically to look at nouns and verbs." But now that there is this data, we can start asking these questions of what's happening in this language and adding another dimension to the generalisations that have been made that maybe aren't fully correct for a bigger picture of how children learn language.

Gretchen: There's so many ways you can refine on a particular question of like, "Do kids use more nouns and verbs to start with?" that that question can be asked very interestingly of different languages and find different results.

Lauren: Were there other papers in the survey that touched on this type of topic?

Gretchen: Yeah, there were a lot of noun-versus-verb papers. Another trend that I saw in the data was analyses of languages where the words tend to be built up of a whole bunch of little, small parts that each contribute part of the meaning.

Lauren: Unlike English, which is very impoverished in this regard. We have a bit of like – we can add an S to make a plural in something like "dogs." But there are other languages that do a much better job of adding this kind of complexity up to build words.

Gretchen: Right. You can think of it like any of your verbs could be something like "antidisestablishmentarianism" where you've put a lot of bits on to make it something like that. Only, in this case, I think one of the examples from this paper about Greenlandic, which is "I, too, sleep with a blanket." That's all one word because you can have "I blanket sleep" and sort of make it all into one word.

Lauren: So, when you have a language like this, how do kids go with learning that complexity?

Gretchen: English-speaking kids often don't acquire the little prefixes and suffixes that we have. A kid might say, "Daddy walk," or something like that and not put that S on there that would go on there in adult speech.

Lauren: But we get what's happening.

Gretchen: But we get what's happening. But kids who are learning languages that do a lot with morphology like this actually learn it much earlier than kids where the morphology isn't that important.

Lauren: Hmm, makes sense. They're paying attention to what's important.

Gretchen: There's this Greenlandic 2-year-old that's acquired up to four or five affixes after the stem, which is way more than is typically described for languages that do less with morphology, suggesting that maybe we need to count this differently in languages where putting a bunch of little bits onto a single word is something that's more central to the language.

Lauren: Again, broadening our understanding of what children pay attention to or what's difficult for children by looking at a broader range of different languages.

Gretchen: Right. I think it's, to some extent, irresponsible to theorise without having more data in some respects. There's this paper on Basque – and I'm not even gonna explain what the phenomenon is – but they summarise like seven different theories at the top, but then they're like, "But no one's tried this theory on an ergative language before. It turns out that we have data to differentiate between these theories, and half of them can't be right because we actually have data here." So, spending all of this time coming up with more and more elaborate theories to account for English and maybe French is like, I just think, a bit less interesting than saying, "What if we had a broader range of things that we're trying to account for in theorising?"

Lauren: What are the next 103 languages gonna do to help us refine our understanding of how kids learn language?

Gretchen: I hope there's gonna be another 103 languages. I think people are working on this as a project.

Lauren: So, now you've read these papers, Gretchen, what are you gonna do with all this knowledge?

Gretchen: I'm hoping to keep talking about it. I'm hoping that I may end up getting to talk about some people who are working on having there be more papers added to this sample or more languages that are looked at in this sort of way. I may end up writing an article about it for

somewhere. If I have done that by the time this episode goes up, then we will link to that in the description. If not, keep an eye out for it. And, yeah, just finding out about what's going on in other areas and learning more about linguistic subfields that I didn't necessarily know as much about is such an interesting project.

Lauren: I thank you for summarising that for me to read on Twitter.

[Music]

Gretchen: For more Lingthusiasm and links to everything mentioned in this episode – if you want to read abstracts and titles of 103 papers yourself – go to patreon.com/lingthusiasm. I can be found as @GretchenAMcC on Twitter, my blog is AllThingsLinguistic.com, and my book is *Because Internet*.

Lauren: I tweet and blog as Superlinguo. Lingthusiasm is created and produced by Gretchen McCulloch and Lauren Gawne. Our Senior Producer is Claire Gawne, our Production Editor is Sarah Dopierala, our Production Assistant is Martha Tsutsui-Billins. Our music is "Ancient City" by The Triangles.

Gretchen: Thanks so much for being a patron.

Lauren: Stay lingthusiastic!

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