Design Notes Episode 04 - Luis von Ahn

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Liam Spradlin: Design Notes is a show from Google Design about creative work and what it teaches us. Each episode we'll talk with people from unique creative fields to discover what inspires and unites us in our practice.

Aaron Lammer: Welcome to Design Notes. This is a very special episode that was taped at SPAN 2017 in Pittsburgh. I'm Aaron. I'll be your guest host for a few conversation from that conference. This one is with Luis who is the founder of Duolingo. He grew up in Guatemala. His mother deciding to buy him a Commodore 64 instead of the classic 8-bit Nintendo ended up having a profound impact on his career direction.

Luis von Ahn: Unfortunately, I didn't have very many games, and I didn't really have very many people that I knew that also had games kinda to share. So I started trying to figure out how to make my own.

Aaron: Eventually, his love for games and programming took him to Pittsburgh for graduate school where one of the first things that he created was the CAPTCHA. If you've been on the internet, you've seen a CAPTCHA. It's the slanty text that you have to type in.

Luis: But it's a test that a computer can, can grade, but it itself cannot pass.

Aaron: For his next company, he took on gaming as a way to learn specifically as a way to learn languages with Duolingo.

Luis: This is very related to the fact that I'm from Guatemala. I, I wanted to do something that would have immediate impact on people. If you're a non-English speaking country and you know English, usually you can make between 20 and 100% higher salary.

Aaron: Design Notes is made by Google Design. We have more episodes from SPAN 2017 in Pittsburgh in the feed. Uh, welcome Luis.

Luis: Thank you for having me.

Aaron: You grew up in Guatemala.

Luis: I did.

Aaron: When I look back at the different projects you've done, uh, I see interests in games, and I see interest in human computational power. Going back to your childhood, what where the things that got you into that kind of stuff?

Luis: Um, I ... When I was eight, I ... all my friends were getting Nintendos. I, I wanted a Nintendo. I asked my mom for a Nintendo but-

Aaron: This is original Nintendo.

Luis: The original Nintendo.

Aaron: The 8-bit.

Luis: The NES. Yeah, yeah.

Aaron: Yeah.

Luis: Uh, but my mom did not wanna get me a Nintendo. Instead, she got me this computer.

Aaron: Right.

Luis: It was ... At the time, it was a Commodore 64, and, um, she said, "This is what you get." And, uh, I don't think she realized those things were not very easy to use, and I didn't have anybody to learn from. So I, you know, I kinda figure out how to use it, but it took me a while. Um-

Aaron: Do you think your mom was trying to push you down a specific path with a computer or-

Luis: Yeah.

Aaron: ... she just had like a anti-Mario kind of fixation.

Luis: No, no, no. I, I think she really thought ... She probably talked to somebody and they said, "Look, you can play games with a computer, too, but-

Aaron: Yeah.

Luis: ... you may learn something."

Aaron: Yeah.

Luis: That's probably what happened. Um, so I figured out how to, how to use it, uh, but unfortunately, I didn't have very many games, and I didn't really have very many people that I knew that also had games kinda to share.

Aaron: Yeah.

Luis: Uh, so I started trying to figure out how to make my own. Uh, and that's, that's kinda how I started getting into games and programming, et cetera. Ev-eventually, I convinced my mom to buy me a Nintendo and, and that happened. (laughs)

Aaron: Were, were Nintendo and computers widespread in Guatemala at the time or was that a rare thing to see?

Luis: Nintendos were widespread. Computers were not particularly for ... I mean this was in the, in you know, kind of late '80s. Uh, uh, an, uh, eight to 10-year-old kid did not have a computer.

Aaron: Yeah. When I think back to, um, programming during that period, one of the things that I realized is a bias that you don't notice as an American is that most programming is written in English.

Luis: Yeah, yeah, yeah.

Aaron: Um, and, and, not just the programming but the instructional manuals.

Luis: Mm-hmm (affirmative).

Aaron: The way to learn are in E- English. So did you speak English at that point in time?

Luis: Yeah. I did. I mean I was, I was fortunate that I went to an American school.

Aaron: Mm-hmm (affirmative).

Luis: So I, I spoke ... I mean probably my English was not as good as the native speakers of English, but it, it was kinda good enough to, to read-

Aaron: Yeah.

Luis: ... to read that stuff.

Aaron: What's it like ... What was it like write- learning the sort of other language that's neither English nor Spanish while you were also a novice English speaker? (laughs)

Luis: I don't think that was the biggest difficulty. I mean the biggest difficulty was I literally had nobody to learn from.

Aaron: Ah.

Luis: Uh, so I sometimes spent hours and hours and hours trying to figure things out.

Aaron: Mm-hmm (affirmative).

Luis: Um, and sometimes it was just ... There was a typo in the instruction manual or something, and I just, uh, that just cost me 10 hours or something. So, it was tedious.

Aaron: And what brought you to Pittsburgh originally?

Luis: From Guatemala, I, I decided to come to college to the US. That was not in Pittsburgh. I went to college in ... at Duke in North Carolina. And then, um, I finished my undergrad, and I wanted to get a PhD in computer science. I mainly wanted to get a PhD 'cause I didn't wanna get a job. And all these people are getting jobs. At the time, the big thing was to get a job at Microsoft. Um, most people were getting jobs at Microsoft or either that or kind of at Wall Street. I didn't particularly wanna do that.

Um, so I decided I wanted to go to grad school, and then applied to a bunch of grad schools. I got into a few and CMU was one of them, and it was, uh, kinda ranked number one in computer science. And then I came and visited and I really liked my PhD adviser. Well, I mean the guy who eventually became my PhD adviser. I just liked this one guy. And I decided to come to Pittsburgh.

Aaron: And was it during that period that you started working on CAPTCHA?

Luis: Yeah. That ... I was very fortunate. I mean I, I showed up at CMU. This was in August of the year 2000, and maybe two months later, or not even two months later, like a month and a half later, I was lucky to be in a, in the audience. This guy, um, who eventually ended up working for Google, but at the time was the chief scientist at Yahoo, came and give a talk at Carnegie Mellon, and he said, "Here are 10 problems that, uh, we don't know how to solve at Yahoo." Uh, and at that time, Yahoo was kind of the biggest, the biggest, you know, internet company.

And, you know, I went home, and I, you know, tried to think about all 10 problems. Nine of them I had no idea what to do.

Aaron: (laughs)

Luis: Uh, and then there was one. The problem was look there are these ... Yahoo is ... was offering free email accounts at the time. Sort of ... It was sort of revolutionary that Yahoo and Hotmail were offering free email accounts, and they were. Um, and they had this problem that some people were writing programs to obtain millions of email accounts from, from Yahoo. The problem was how do we stop them, you know.

Um, I went home. I thought about it. Then I discussed it with my PhD adviser, and together we came up with this idea of a CAPTCHA which is these, these distorted characters that you see all over the internet and you know that you have to type whenever, you know, whenever you're getting an account or whatever. You know, we came up with the idea. Uh, we implemented the first prototype and within, within a couple of months, it was live on Yahoo, which is I now in retrospect realize how fast that was for such a large company, and it's because they just had a really huge problem.

Aaron: It's, um, kind of incredible to think of that in 2000. I, I feel like everyone you meet at a conference now has some side project that they're trying to turn into something, but the tools to build something like that must have been kind of all hand done. I mean there's not like, uh, APIs and stuff to tap into.

Luis: Oh, yeah. There was nothing at the time. There was nothing. I mean we had to build even the ... even, even writing a program to distort images.

Aaron: Yeah.

Luis: I mean today that is so easy because almost every kind of ... almost every programming language comes with, you know, image manipulation tools. At the time, it didn't so-

Aaron: Yeah.

Luis: ... you had to basically get the image, turn it into a matrix, and then you apply the actual transformations, et cetera. Like it was all handmade. Yeah. That was ... It's a different time.

Aaron: I'm assuming that people listening to this are familiar with the CAPTCHA because it's gonna ... it would be difficult to have say an email account right now if you have not, uh, filled out a CAPTCHA.

Luis: Yeah.

Aaron: But at its core, you're basically creating a little tiny game that a computer is terrible at and a person is pretty good at.

Luis: Yeah. And there's one more thing.

Aaron: Yeah.

Luis: A computer should be able to grade it-

Aaron: Hm.

Luis: ... which is an interesting thing because the computer should be ... So, this is a paradoxical thing that a computer should not be able to pass it, but it's a test that a computer can, can grade, but it itself cannot pass.

Aaron: So as you were developing it and you're starting to see people use it, how did you, how did you approach the idea of a computer grading the results?

Luis: I mean this was, this was part of the thing. I mean, uh, it ... So this ... Ultimately, a CAPTCHA is a, is a test that can distinguish humans from computers. Um, it turns out that computers are worse that humans at reading these distorted characters, but we couldn't have a human on the other side kinda having to grade these. They have to be graded by a computer because it's done millions of times a day.

Very similar to this idea of a Turing test which was, you know, it's this idea from the 1950s. The idea is that if a Turing test is a test that can tell humans from computers apart, but in the Turing test, there was a human judge trying to figure out if it was talking to a human or a computer. But in the case of a CAPTCHA, it's a, it's a computer judge that gives you a test, uh, and it's trying to figure out if it's a, it's a human or a computer.

Aaron: Do you think CAPTCHAs are getting harder now?

Luis: Yeah, they are. What's happening ultimately is that computers are getting smarter.

Aaron: Yeah.

Luis: And it's getting harder and harder to find things that humans are much better at than computers. The thing about a CAPTCHA is it has to be doable within 30 seconds, and it should be graded by a computer, and it should be that computers cannot do it almost at all, whereas humans can very easily do it. It's getting harder and harder to find such things. And the way CAPTCHAs have evolved is basically, the distortions have gotten harder and harder.

Aaron: Yeah.

Luis: And now that's happening. And, and at some point, uh, the whole concept of CAPTCHA won't exist. I mean at some point, computers will be able to do most everything that humans can and that, that will be it.

Aaron: So when you started Duolingo, what kinds of ideas about this like human-computer interaction did you take with you to Duolingo. Like we kinda broke down like what a CAPTCHA is doing.

Luis: Mm-hmm (affirmative).

Aaron: What is Duolingo doing at that very core level?

Luis: Well, Duolingo was, I mean it was, uh, st- you know, started about, about six years ago. The, the idea was to teach people stuff. Um, I actually didn't know what we wanted to teach. Um, it turns out, we ended up teaching languages. But at the time, I just wanted to do something that would teach people stuff. Uh, I thought that learning on the internet would become, uh, a really huge thing-

Aaron: Yeah.

Luis: ... uh, that a lot of things would be learned on the internet. I also ... This is very related to the fact that I'm from Guatemala. I, I wanted to do something that would have immediate impact on people. You know, I really love math for example, but teaching math doesn't have immediate impact because you usually learn math in order to learn something else, in order to learn something else to eventually become an engineer or something like that.

Whereas, languages, and this is why kinda we ended up designing on languages, for many countries in the world, particularly knowledge of English, if, if you, if you're a non-English speaking country and you know English, usually, you can make between 20 and 100% higher salary just by the fact that you

know English. I, I guess if you're also in an English-speaking country, you need to know English. (laughs)

Aaron: (laughs) Yes.

Luis: Uh, but basically, learning English is something that has immediate monetary impact ... right? ... you know, to improve your life.

Aaron: Starting with the idea that lang- the language part is almost arbitrary and it's a training regimen, when the big wave came to online education, it was kind of skeuomorphic. It was kinda like how can we put a university in your laptop.

Luis: Yeah, yeah, yeah. That was different. Yeah.

Aaron: And what you're doing is a little bit more ... I ... It reminds me more of like when I was playing sports as a kid, like trying to learn basketball, and the coach was like every day we're doing layup lines. You got to learn the layup. What kinds of inspirations did you take for the way that you wanted to teach people?

Luis: Yeah. In this case, it really was games. And this is, this is very different. I mean so Duolingo started at around the same time as all these companies started that, that were trying to bring online education, you know-

Aaron: Yup.

Luis: ... to, to fruition. Uh, so like Coursera-

Aaron: Yeah.

Luis: ... uh, companies like that where, you know, their approach has been “okay, we're gonna take whatever is happening in the real world which is a lecture…”

Aaron: Yeah.

Luis: “... We're gonna record it. We're gonna put on video and that's online education.” We had a very different approach. Our inspiration really at the end was games. We very early on realized that we wanted to teach something to somebody over the internet. The biggest problem, uh, learning anything by yourself is staying motivated.

Aaron: Mm-hmm (affirmative).

Luis: It's really quite difficult to stay motivated. It's very similar to going to the gym. Everybody wants to do it.

Aaron: Yeah.

Luis: Uh, but, uh, when, when you start showing up, man, it takes a lot of time, and it's kinda painful and you don't see results immediately, so you give up very easily. And this is why you see for example these, these online courses or the completion rate for these online courses is like it's like 2%. So, we knew that that would be a problem, so this is why, you know, we, we went and looked into games. Games have this very nice property that, you know, uh, a good fraction of the people can spend months if not years playing a single game.

Aaron: Mm-hmm (affirmative).

Luis: Um, so we designed Duolingo to be as close to game as possible. Of course, we want it to be, you know, educational and the results are much better. I mean of the people that sign up to Duolingo, about a quarter, so about 25% become active users, kind of regularly active users for months. So that's much better than 2%.

Aaron: What kinds of longer term outcomes and effects, um, have you found from people who learned in a game as opposed to say like a college classroom?

Luis: So we know about Duolingo how, how well it works. I mean it's, it's, it's very good at taking you from zero knowledge of a language to a level that's called independent. So it's not quite yet fluent. So basically, you will make a lot of mistakes at the end of ... You know, if you, if you use Duolingo for a while, you'll make a lot of mistakes but you will be able to kinda navigate the world. You may not be able to have a conversation about 18th century philosophy, but you'll probably be able to, you know, order food at a restaurant and maybe even like go out on a date.

Aaron: Sure.

Luis: Um, you'll still have a thick accent and sound kind of funny.

Aaron: (laughs)

Luis: Uh, but our philosophy with Duolingo is that's where we wanna get you afterwards if you're really interested. You should probably just practice a lot actually speaking the language, uh, you know. And our philosophy is to get you from zero to this independent level. That's ... It's a little different, the outcomes

in a classroom. It turns out, learning a language in most classrooms are very ineffective. I believe that a very large fraction of the US population was supposed to have taken a foreign language for three or four years and a very large fraction of them can't say more than like taco.

Now, what I think is better than a language classroom and also better than Duolingo is a one-on-one personal tutor. The problem with that is it's very expensive.

Aaron: Yeah.

Luis: And of course, the school system can't quite do that 'cause you got to get one tutor for every student, and that, that's just not, not scalable. Uh, I would say for most language classrooms, Duolingo is probably better if you actually stick with it, but we're not yet as good as a one-on-one human tutor.

Aaron: I'm curious like what kinds of models you le- you use when you're thinking about like learning in that way and particularly when you have access to a big data set. Do you find, "Oh, this vocabulary word actually has a lower success rate than this other vocabulary word?"

Luis: Yeah. Yeah. And this is one of those things with Duolingo that a lot people don't realize. So, you know, most people think of Duolingo as the computers teaching people human ... uh, teaching humans, uh, a language.

Aaron: Yeah.

Luis: Um, but the other way around is happening, too. Basically, humans are teaching the computer how humans learn. And so we're doing a lot of experiments with that and that's, that something else. I mean when you download Duolingo, very likely, you will get a slightly different version of Duolingo than, uh, you know, if your, your friend downloads Duolingo because we are doing a bunch of experiments.

At any given time, we're probably running about a hundred experiments where we're, we're just trying something a little different. I- it ... Sometimes it's really big. Sometimes it's really small. It maybe that for you, we're teaching you plurals before adjectives. For the next person, we're teaching them adjectives before plurals, so the other way around.

Aaron: I think Duolingo thinks my wife is smarter than me.

Luis: (laughs)

Aaron: It always like pushes her a little harder.

Luis: (laughs)

Aaron: It just ... And it kinda knows that she's gonna like follow through-

Luis: Mm-hmm (affirmative).

Aaron: ... whereas with me, it's a little like, "All right, all right, all right."

Luis: Yeah. So, it's pretty adaptive i- in, in many ways. And, and we're trying just different things a lot of times, and we are finding that certain things that we try actually really teach better. Um, and so over time, Duolingo is becoming better and better, uh-

Aaron: Yeah.

Luis: ... at teaching. Um, and it's just because we're, we're watching people learn. Um, one of the key things that we do is we also, we measure everything, you know. People may not realize, but some of the exercises that we give them, they're not quite there to teach you. They're just there for us to determine how well we're doing at teaching you. Within a few years, we should be able to be as good as a one-on-one human tutor. That's, that's our goal. Our goal as a company is to become as good as a one-on-one human tutor.

Aaron: Humans are good at language. It's like one of the things we excel at. When you take this network of all of these brain, like every, every brain that's connected, do you find massive differences between the languages? Like what does the big, big graph of Duolingo tell you?

Luis: It depends a lot on what your native language is. So, for example, it's easier for Spanish speakers to learn English than it is for Chinese speakers to learn English. It just is.

Aaron: Yeah.

Luis: Uh, and that has nothing to do with their intelligence. It's just the languages. Basically, the closer to languages are the easier it is to learn. It turns out different people are ... Some people are much better at learning a language than others. Uh, they really are, and a lot.

Aaron: Yeah.

Luis: Like you see these people that can speak like eight languages and this is great.

Aaron: Yeah.

Luis: And then you see these other people that have been trying for years to learn the same language unsuccessfully.

Aaron: Same thing with the basketball coach.

Luis: Yeah. (laughs)

Aaron: Some of these kids are gonna be good at basketball, some of them are not.

Luis: Yeah. And what's weird is, um, I ... If you had asked me before Duolingo, you know, what's the difference, I would have said, "Well, you know, it's probably some sort of intelligence." Like, "Ah, this person have some, some type of intelligence behind them." But it turns out that, that there may be something to that, but the real biggest reason why some people are better at learning a language than others, uh, and this was …

I mean the first time I heard it, I don't know who discovered this, but the first time I heard this was from a study that the US Army did. So, it turns out the US Army needs to teach people Arabic in particular. That's what they're interested in.

Aaron: Yeah.

Luis: They need to teach their soldiers Arabic. Because it's the US Army, everything is very expensive for them, so it cost them like 50,000 bucks to teach somebody Arabic or something.

Aaron: Yeah.

Luis: They had this problem that they would try to teach some soldiers Arabic and some learned really well, whereas some didn't learn at all. So they had this great idea that they were gonna come up with a test that, uh, before they started ... before they spent the 50,000 bucks there would be like-

Aaron: An aptitude.

Luis: Yes. An aptitude.

Aaron: Yeah.

Luis: And they came up with the aptitude test, and what they found actually ... Uh, so intelligence matters a little. Obviously, if you, if you have very, very low intelligence, you probably shouldn't be trying to learn a language. It's just very low intelligence but-

Aaron: Yeah. I- if you're gonna fail all your classes, you're also gonna fail Spanish class.

Luis: Yeah, yeah. If you have very low intelligence, don't bother. But, but the thing that matters the most is this basically, uh, resilience to sounding stupid. So if you are okay sounding stupid, you're very good at learning a language because what ends happening in practice is ... Look, at first, everybody who learns a language sounds stupid. They, they, they had this super broken, makes all kinds of mistakes, et cetera.

Uh, but those who are resilient to that, to ... they just, they just say stuff. And then they practice and practice because they're actually saying stuff. Then there is the shyer people like me for example. I'm not very good at learning a language because I want to sound perfect. So, I just don't practice. I just don't say anything. And because I'm not practicing anything …

So at the very beginning, I'm about as good as somebody that who is, who is just very good at learning a language at the very beginning, but the thing is they start practicing like crazy, and I'm not saying anything. I'm just the other quiet kid on the other side, and, and that's it. That's, that makes a huge difference.

A lot of people wanna practice with others when they're trying to learn a language, um, but it turns out, most people, um, feel too uncomfortable with it. This is, this is the, the issue that-

Aaron: Yeah.

Luis: ... they do not actually wanna do that. So we just launched this thing. We actually can practice a language but you're actually talking to an AI. So we'd launch these Duolingo Bots. It's a chatbot. And the beautiful thing about the chatbot is people don't feel like the computer is judging them. Everybody actually is, is very happily practicing with a chatbot. Uh, even though the computer is judging them, um-

Aaron: Do you employ like psychologists at Duolingo 'cause it seems like you're getting kind of ... This is as much a problem of, of humans and the human mind as it is a problem of machine learning or, or programming?

Luis: Yeah, yeah. So we have, we have a couple of people like that. Um, we have, we have also second language acquisition experts, um, and, you know, probably the ones that spend the most time with this are actually our designers. Our designers are actually, uh, doing that. We have, we have some designers that are, um ... It's funny. You know who's actually the best at teaching languages? I find the ones ... the people who are shitty at learning languages themselves.

Aaron: Ah.

Luis: Uh, because they know it's hard.

Aaron: Yeah.

Luis: And they're kind of ... They're pretty good. So we have ... And that includes me. We have a, we have a, a good number of people at Duolingo who are crappy at learning languages who spend a lot of time thinking about how to better teach languages.

Aaron: Yeah. I'm interested in ... So now that you've kind of learned about how to teach someone something. Is there an urge to do Duolingo math or like to, to teach people-

Luis: Yeah.

Aaron: ... other things with the same tools?

Luis: There is. Um, and we, we really have been talking a lot about that in the company. I mean the first thing we're gonna do is, is probably something for kids. Um, so teaching ... So right now Duolingo works for ages eight and up.

Aaron: Yeah.

Luis: Um, 'cause we need to know how to read and write. But we're gonna, we're bring that age down.

Aaron: Mm-hmm (affirmative).

Luis: Um, so that's kinda first thing, but we're, we're also thinking about teaching people basic literacy. So reading and writing. Um, a- and not only kids, um,

adults. It turns out, there's a billion adults in the world that don't know how to read and write. That's a lot, and I think we should be able to do something. Weirdly, um, it turns out that about 10% of these people have a smart phone. That just tells you how successful these phone companies are at selling people smartphones that don't actually need them.

Uh, but, you know, the good thing is they have a smartphone, so maybe you can, you can reach them with an app. Uh, and then, you know, people have been talking about math or physics or stuff like that. I don't know what we'll end up doing, um, but, but I'm, um, we're very interested in this.

Aaron: I think that there's a, a fear of the Englishization of the world, you know. That has all sorts of impli- implications for culture-

Luis: Yup.

Aaron: ... and, um, identity. That's a dystopian view now, but in the 1970s, we're trying to create Esperanto-

Luis: (laughs)

Aaron: ... which was this k- kind of almost like a computer. I don't think it was made by a computer-

Luis: No.

Aaron: ... but it did a lot of things that a computer would do if you fed all of the languages in-

Luis: Yeah.

Aaron: ... and tried to get like a, like, um, a common average language.

Luis: Mm-hmm (affirmative).

Aaron: So I wonder how you think about those kind of ideas at Duolingo. Is Duolingo like merging all the languages? Is it exploding them?

Luis: Yeah. We think about this a lot. We don't know the answer to that. I mean there's, there's, there's, there's evidence for both. I mean we, we do teach Esperanto by the way.

Aaron: Oh, you do.

Luis: Um, we do. We do teach Esperanto.

Aaron: Do you ... Are you an Esperanto, um, speaker?

Luis: No, no. I don't know ... No, no, no. But it's actually quite easy. So what is true? So Esperanto is a made-up language.

Aaron: Yeah.

Luis: Um, and it was made up so that it was easy to learn. It is actually quite true that Esperanto is very easy to learn.

Aaron: Right.

Luis: I mean we have the data. People can learn Esperanto quite quickly because everything is very simple, and the words are really picked ... You know, they're kind of usually cognates to most kind of, uh, you know. If, if you speak a European language, you can understand a lot of the words. Um-

Aaron: Yeah. It's the Ruby on Rails of languages. (laughs)

Luis: Yeah. It's, it's, it's, it's good. It's ... I mean I don't think it will ever happen that everybody starts speaking Esperanto.

Aaron: Yeah.

Luis: That just won't happen. But, uh, but a lot of people learn Esperanto in Duolingo. We have over a million people learning Esperanto-

Aaron: Yeah.

Luis: ... which is kinda weird. So there's evidence for both. I mean we ... For example, we teach some and we tried to do this. We, we teach some languages that are kinda smaller. Um, for example we teach Irish. Irish has 94,000 speakers. I actually did not realize that Irish was a language until I started working on Duolingo. I thought they all spoke English there, which most of them do, but there's 94,000 native speakers of Irish. We have two million people learning Irish in Duolingo.

So there's a chance to actually multiply the number of speakers of Irish by 10 through Duolingo. So that's one way in which we're kind of growing these languages, uh, but at the same time we're also, you know, a very large fraction

of people are learning English. So, it's kinda both. I personally don't ... I'm not ... After having worked on Duolingo for, for so long, I, I am not particularly worried about everybody in the world only speaking English.

Aaron: Yeah.

Luis: Um, people are way too, you know, uh, attached to their language. A lot of people will say like, "Well, you know, most young people in the world speak English." This is just not true. A lot of young people in ... Even in countries that you would think ... Uh, you know, even in Germany, there's a lot of young people who don't speak English.

Aaron: Do you get lobbied? Like where someone is like-

Luis: We do.

Aaron: ... "Come on. Please add Icelandic."

Luis: We do. We do get lobbied a lot.

Aaron: Yeah.

Luis: Like governments, too. I mean we, we've had, we've had offices of presidents of all kinds of countries saying, "Please add our language." Um, we got a, we got a prize from the president of Ireland, uh, for teaching so much Irish. Um, one ... Some of the hardest lobbies are from the Scandinavian countries.

So this was kind of this funny thing. We, we added one Scandinavian language. By the way, Scandinavian languages, they all speak English there.

Aaron: Yeah.

Luis: So this is why we haven't quite added too many Scandinavian languages. But, but we start-

Aaron: They speak English better than most Americans there. (laughs)

Luis: Yeah. So, so we started a- We added Danish first. On, on the day we added Danish, the, the Swedes and the Norwegians went nuts on us. They're like ... Oh, my god. They have petitions in change.org about like adding. So fine, so we added ... At the same time, we, we added Swedish and Norwegian. And immediately after that the Finns are now going nuts on us. And we haven't quite added Finnish yet, but, um, they are, they are really ... They have this ... You

know, people from the government keep contacting us, and there's all kinds of things.

We haven't quite added it. It turns out learning Finnish is pretty difficult. Um, but at some point, we'll add it. Uh, at this point, it's become more of a joke where I publicly have said we're, we're not gonna add Finnish. It's the one language we're never gonna add. (laughs)

Aaron: (laughs) Okay. Well, you've, uh, you've heard on this show first. There will never be a Finnish Duolingo.

Luis: (laughs)

Aaron: Um, thank you very much for, uh, for this interview. It was great.

Luis: All right. Thank you. Thank you.

Aaron: Um, I'm really looking forward to your, uh, to your talk.

Luis: Thank you. Thank you for having me.

Aaron: Well, thanks for listening to Design Notes. Design Notes is put out by Google Design. This was a very special episode taped at the SPAN Conference in Pittsburgh. So I am the guest host to this show, but this show has a real host, and that host is Liam Spradlin. Whoa.

Liam: That's me. (laughs)

Aaron: Hey, hey Liam. Uh, tell me about what, uh, what led you to found Design Notes?

Liam: Uh, I think the ulterior motive for Design Notes is that I'm really interested in hearing from people in other creative disciplines about what they're working on.

Aaron: And, um, what's like, what's the show like generally week to week? The normal show, not this extra special amazing super guest episode.

Liam: Uh, so normally, I, I would say it's pretty close. We have guests from a variety of different creative disciplines and we look for the commonalities running through all design work, and just the different ways that we approach those from each discipline.

Aaron: Cool. Uh, where can people who would like to hear that find it?

Liam: You can find it at design.google/podcasts.