Laurel Sutton: Hello, and welcome to another Linguistics Careercast, the podcast devoted to exploring careers for linguists outside academia. I'm your host, Laurel Sutton. This episode is an audio version of a virtual panel held at the Linguistics Career Launch in the summer of 2021. The title of the panel is Natural Language Processing, and the moderator is Christopher Phipps. Natural Language Processing, or NLP, is a branch of artificial intelligence concerned with automated interpretation and generation of human language. The goal of NLP is how to program computers to process and analyze large amounts of natural language data, including both text and speech data. Unlike earlier, fully rules-based methods, more recently NLP proceeds by using machine learning and statistical methods. Our panelists follow different routes from linguistics into natural language processing. They share their decisions about taking these routes and what's involved in this profession. They also discuss the common question for working in NLP: “How technical do I need to be?” There are three presenters: Ezra Wyschogrod, working at Amazon; Esmé Manandise, working at Intuit; and Rich Campbell, working at Genesys. Links to the presenters' LinkedIn profiles and related resources are in the show notes. Topics include natural language processing, natural language technology, NLP, Alexa, project management, networking, job qualifications, coding, Python, and salaries.

Christopher Phipps: All right. So, without further ado, I'm just going to follow the order that was listed on the web page. So I'm just going to introduce Ezra Wyschogrod. Am I saying your name correct?

Ezra Wyschogrod: Wow. On the first try. Very impressive.

Christopher Phipps: I'm a linguist. Hey, not bad.

Ezra Wyschogrod: Really good.

Christopher Phipps: Ezra, I'm just going to ask you to give a quick brief summary of who you are, what your current job is, and how you got there.

Ezra Wyschogrod: Sure. So I would classify myself as an early-career career linguist. I had a background academically in linguistics, went to Columbia undergrad, majored in it, went to Georgetown, and got a master's. I entered in the PhD program, and I left shortly after receiving a master's degree. My research interests were in phonetics and phonology. I did fieldwork in West Africa and the Ivory Coast. I did field work for the Kurdish languages as part of the Endangered Language Alliance in New York City when I was at Columbia. I did a little bit of dialectology stuff as well. I did some Boston accent research back home where I'm from. And since grad school, I worked at Expert System USA, which is definitely a smaller company that does defense subcontracting, which is Washington D.C.-ese for helping the government out with linguistic-type problems (document categorization, information extractions, things like that). I'm now working at a much larger company, of course, Amazon, working with Alexa. I would say caution everyone that hopefully you don't have an Alexa around you turned on, because I might be activating a bunch of people's Alexas right now by saying that. But basically in the past few years, I've gone from being a grad student, very academically minded, to a smaller company to a larger company. So I think I've seen definitely a bunch of different scenes in the past two or three years.

Christopher Phipps: So give us a sense of when you started looking towards industry as a career path.

Ezra Wyschogrod: So in grad school, and actually it comes back to actually one particular experience I had in grad school where at Georgetown, the phonetics/phonology people had a reading group every Friday, and we had a particularly, for lack of a better term, gifted guest speaker that was coming and spoke to us about, to geek out a little bit about epenthetic vowels in Georgian, which phonetics/phonology people love. And one of the most brilliant talks I've ever heard in my life, linguistics or otherwise, and afterwards we came to talk about her struggles in finding a job in academia, and it was incredibly disheartening because this was one of the smartest people I've ever met. She had applied all over the world — without exaggerating-- to all these different departments in the English- and French-speaking world to try to find an academic position. And she was telling us, there's maybe three, four or five jobs that might come up in a particular season that are tenure-track phonetics/phonology. And it was so disheartening for me to hear that you have to travel so far, work so hard with very questionable returns that I don't know if I was willing to put myself through that, budding family through that. So that was kind of the day where I figured it just might not be worth it, which might not be worth it for me. It could be worth it for others, but I didn't really see it fitting into my life.

Christopher Phipps: Let me ask you this, Ezra. Give us an example of a task you do at work on a daily or weekly basis. Just give us a sampling.

Ezra Wyschogrod: Well, at least at Amazon, for instance, one of the things that I might do is try to look at the current utterances, current sentences that Alexa might be able to understand at this point, and try to find, what kind of utterances are we not giving our customers. What utterances that the data might suggest might be necessary do we not have? And I'm going through a lot of linguistic data to do that, and I'm in charge basically from start to finish on an entire design of, “I have an idea of something that Alexa should be able to understand. I'm going to execute it from testing it with the current machinery that Alexa has all the way to the release into Alexa's software.” So that's something I'm doing every day. I'm going through a bunch of linguistic data and seeing what utterances could make us better.

Christopher Phipps: All right. So I'm going to get super detailed here. What is the format of that data? Is it a CSV file? Is it a special tooling?

Ezra Wyschogrod: So this is where I begin to dance with my NDA.

Christopher Phipps: Fair enough. Fair enough.

Ezra Wyschogrod: Sure. So for those who might not know, there's a non-disclosure agreement at many tech firms, both large and small, and I think the one thing they might tell you during training is to be careful there. But I would say that the format that I'm looking at it in is definitely something approachable if you've had linguistic training at a bachelor's degree level, master's degree level and onwards. That's for sure.

Christopher Phipps: Excellent. Okay. Do you miss academics?

Ezra Wyschogrod: It's a very fair question. And to me, it's a very easy answer: I don't. And that's not to cast aspersions onto anyone who might be listening who does miss academia, really enjoys it. I think that's wonderful that you do, and it's obviously a really, really noble thing to be in academia. I really believe that in my heart. I would say that the thing that I really don't miss is the incentive structures in academia. There's no limiting factor. You should always be publishing more. A lot of your major career approvals have to be of your peers and not the customer, so getting tenure has a lot to do with impressing the academy, i.e. other academics versus trying to make the customer experience best. And every evaluation scheme is fraught, but I'd much rather work on impressing customers than other academics. Just a personal predilection.

Christopher Phipps: Can you think of a skill you've learned since you've entered industry?

Ezra Wyschogrod: Oh, boy. Yes.

Christopher Phipps: Pick any one.

Ezra Wyschogrod: Yeah. Even though I'm certainly not a project manager, I would say a lot of those type of skills of scheduling meetings, making sure that everyone's on task, timekeeping, things like that. Anything that involves keeping people up to date with information on an evolving project, that's not something that I think grad school really prepares you for, particularly in linguistics where research teams tend to be small. I would say that my first boss out of grad school could definitely tell you that this whole timekeeping thing took me several months to figure out. And it's a little silly thing like that, but it's really something that is kind of alien when you're a grad student, because a grad student, your time isn't viewed the same way. There's not really working hours. You're just working.

Christopher Phipps: That's a great point. Side note, several years ago, we hired a guy straight out of the Army. He went in the Army as a high school student. He was about 25, 26. He left. He never had a real job. He had only been in the Army. We hired him into IBM, and he shows up the first day and kind of looks around and goes, “When do I start?” He was so used to that rigid Army structure of somebody telling him exactly what to do every second, every minute. But in industry, you show up at 9:00 AM., you show up at 9.05 AM, no one's keeping track of exactly where you are at any moment. But you have a job to do, you have a task to complete. How did you find the Amazon job?

Ezra Wyschogrod: Basically, I was given some really, really good advice very, very early on in my career, i.e. a year and a half ago, which is basically, even if you have a wonderful job and you're working in that, you're in the middle of that, you don't necessarily have immediate plans to be leaving, still look for a job. Never stop looking. Which was something very odd to me, because I got an amazing job out of grad school, and I was like, “Why should I keep doing this?” But really, those opportunities will show up when you're not necessarily ready for them, and it doesn't necessarily make sense, but you should still know about those opportunities. I was looking at different job boards constantly throughout my first job. And as it happens, on Amazon.jobs, which is the Amazon job engine, the most up-to-date place for Amazon jobs, something came up in the city that I knew I'd be moving to relatively soon, and I jumped on it. It was just a matter of being very pesky at looking at all the resources that you have in front of you.

Christopher Phipps: That brings up a good point, is relocation. For your first job, you were already in D.C., and you stayed in D.C., correct?

Ezra Wyschogrod: Correct.

Christopher Phipps: But it sounds like you will be relocating soon?

Ezra Wyschogrod: That's right. I'm actually going to be going back to where I grew up in Boston. I'm actually in D.C. right now, speaking to you from Foggy Bottom, but Amazon is letting me work from the D.C. area until early next year. But of course, it's the COVID thing. But the relocation thing is really, really tough and I don't think that's necessarily something that's unique to linguistics, and I would say that one of the challenges that I certainly had coming out of grad school is that while D.C. is a pretty good market for linguistics jobs, it's certainly not the best one, particularly for linguistics and tech. It's no Seattle. It's no Boston. It's not even a New York. And that can be really tough. And that was honestly a challenge that I had when looking through all these different LinkedIn listings, and they're just not your city. And that can be really tough.

Christopher Phipps: Right, right. So since you've recently been in the job search, you have a good insight into this better than, say, me or some of the other folks who've been at the same job for a while. You know, how, I don't want to say easy, but like, how did you go searching for linguist jobs? Strictly keyword searching or what were your tips?

Ezra Wyschogrod: Oh, it's terrible. It's really terrible because we're a very misunderstood people, us linguists. To give you an example, when I searched “linguist” in LinkedIn, you know, as grad school was ending, you get translator jobs. Nothing wrong with being a translator. That's not what we think linguists are. So what it really was, it was, you know, like keyword searches kind of drew me, got me a little bit crazy, but ultimately what ended up being great was reaching out to other linguists. I know it's something that I think people must've heard in the past few weeks, but it sounds tired, but it really is true. And I was very lucky to be in a department that had Alex Johnston, who was a really incredible, incredible, incredible resource for linguistics in academia. I was really lucky to have a hiring manager/first boss, Emily Pace as well, who was a linguist herself and really understood linguists. I think it's really about being in depth in the linguist community. And I think that actually helps most directly.

Christopher Phipps: Great. All right. So I want to make sure we have plenty of time for everybody, so what I'm going to do is I ask you one last question, and I stole this question from one of my favorite podcasts, so it's not mine. This is, I feel petty. I want you to think about something you feel petty about. And for example, I work at IBM, and I am completely petty about the career framework that kind of we have to do so many kind of onerous, silly things to progress in our career. We have to fill in all this paperwork. We have to do these fake classes. They're horrible. I'm very petty about the career framework at IBM. Can you think of something you feel petty about in your career?

Ezra Wyschogrod: For sure, and I'm glad you tapped into my petty side. This is great. I am definitely most petty about job skill lists on job sites because I took it as a bare minimum, “Here's all the [lists 13:30] you have.” Really, it's like a Christmas wishlist, more likely. I remember seeing, some of them are even nonsensical. I remember seeing that some job wanted something like 10 or 12 years of Python 3 experience. I don't even know if Python 3 came out then. Yeah, a lot of things that are just really like nonsensical. They're not going to, I don't know what candidate would fill all this. So really just like, I think taking the list of qualifications with a little bit of a grain of salt I think was something that I really wish I knew at the beginning. I was very petty about that.

Christopher Phipps: Great. Great. Actually, I think maybe I will ask you one last question because you brought up something that I'm going to ask everybody, and that is, what is the role of coding in your day-to-day job? You mentioned Python. Do you know Python? Do you work with that?

Ezra Wyschogrod: It's a great question. I know Python the way a linguist would know Python. I don't know Python the way an NLP person would know Python. And there's definitely, I think definitely a distinction there. I've had about, I would say three courses in Python academically, and have done it in practice in my last job and a little bit in this job. I would say that even in roles where you don't do coding directly, the thought processes that coding gives you is tremendously invaluable in whatever NLP-related job you're doing, even if you're not directly coding. So like for those who are listening who are early enough in their career, well, actually it's never too late to teach yourself anything, but I would say for those particularly who are still in grad school, even taking one or two coding courses, even if it's not for the content, it's for the style of thinking, is what I would say.

Christopher Phipps: Now I want to move on to Esmé. Esmé Manandise. Did I pronounce that correctly?

Esmé Manandise: No. Manandise [manɑ̃'diz].

Christopher Phipps: Manandise [manɑ̃'diz].

Esmé Manandise: People call me so oftentimes “Merchandise,” so [unclear 15:20]. Okay, so I'm Esmé Manandise. I was born and raised in Brussels, Belgium, and I came to the States to study linguistics and graduated from the University of Arizona, and my thesis advisor was Dr. Susan Steele. I believe she's in the audience today. And when I finished, so my interest in graduate school was formal syntax and Montague semantics and any type of formal grammars. And early on, I knew that I also wanted to go into coding, so I took already courses in computer sciences. So I feel a little of a cheater here. But I did major in linguistics with a minor in computer science. When I finished my PhD, I actually got three jobs in academia. Two in the States, one in Flagstaff at the university there, one in San Jose, and then one at home back in Belgium. And I'm a French speaker from Belgium, so jobs at universities are very few and rare, and by Christmas, I knew that I didn't want to teach about language and linguistics. I actually wanted to do code development and create products that were based on natural language. And so I was in touch with Susan Steele when I was back there, and she kept sending me a job notification that she came across. So I ended up finding a job in the area that I wanted, was to develop a work on natural language technologies. So my main tenure professionally has been at IBM at T.J. Watson's, at the Research Center. My last manager was David Ferrucci, when we were still big on a show called Jeopardy! But when he left, we still went working on the, we work on the health industry. But another manager of mine was Dr. Michael McCord, who was a mathematician actually, but he developed all this language technology and parsing technology that was used at the, which is, and was at the core of the Watson project, the Jeopardy. And while I was there, living the life of — since you are at IBM, you know, of the IBMer, you know, people do a whole career there — somebody contacted me through LinkedIn, my current manager at Intuit. And I usually get a lot of inquiries through LinkedIn, mostly people from various outfits wanted to know if they want, I'm interested in a new job. But this one, rather than being long and tedious, was funny, and it piqued my curiosity. And I agreed to a job, to a first contact by phone. And I thought the problem that they wanted to solve was really fascinating. And I went for the job interview, the formal interview with homework, because in this space of natural language technology, typically you receive a natural language problem for which you have to code a solution that you deliver to the team that's going to do the hiring or the interview, and then you go to the interview and you discuss why you implemented it this way, what are the possible outcomes and the pitfalls and all of that. I have to confess, it took me three months to accept the offer. So I've been with Intuit for four years and a half. And I work on… My data is always unstructured, unannotated, both text and [unclear 19:36].

Christopher Phipps: Fantastic. So, I am very familiar with slot grammar, as a matter of fact, the grammar that Michael McCord… Not for the rest of the crowd, but we actually are trying to get that open sourced. There's still a group of IBMers who are trying to get that released.

Esmé Manandise: It would make so much sense if it were. I would then work on Intuit to use it…

Christopher Phipps: Oh, fantastic.

Esmé Manandise: … rather than use spaCy and other type of parsers up there. Yeah.

Christopher Phipps: So that leads to the question related to the Python question, which is, what kind of tools do you normally use, NLP tools, in this new Intuit work?

Esmé Manandise: All day long, probably half of my time is actual hands-on development coding directly in Python. Then this company has a very special development mentality, because there is one that's very different from the one at IBM. At IBM, my whole career, I was developing tools with IBM technology for IBM usage. Here, they like to accelerate things, and so we use a lot of open source third-parties’ code libraries. And so I use what's out there. I poke around behind the scene, and then I tailor and see what it would take to adapt it to my end goals. So if it's open source and we can modify directly the code, then I'll just do it.

Christopher Phipps: So you've done a lot of research stuff in your career, so this may, I think the answer may be obvious, but I'll ask it anyways. How important is the PhD to what you do, or could you do this job with, say, just a master's?

Esmé Manandise: Well, I don't think so. For one thing, there's two things. I think that by the time you go to the PhD, you're really… So you have an idea, that's the purpose of your PhD, you want to prove it, right? And so you not only write about it, but you investigate it, and you develop the proof of concept, and you test it. And I think these are the type of analytical skills that are often required when you work on a project that is a little more high-level, where you actually have to take the initiative to solve a problem, rather than be just an executioner. And I think the PhD develops all these analytical skills in the space of natural language, so you learn to analyze the data, to interpret it, to create various tools to have even more insight on massive data. You learn to validate the evidence, and you learn all of that while you do your PhD. I was very fortunate to take a lot of individual studies with the faculty members, and especially my thesis advisor. And she was a tough cookie. She was always asking me, “Why? Why?” You know, like [unclear 22:44] “Why? Why?” And so that forced me to always think about, “Why am I saying this? What is the proof? What is the counterproof?” And I think this is very useful. I don't think that at the master level, the programs demand that you push the envelope this way. You're still learning a lot of basic skills.

Christopher Phipps: So here's potentially a touchy question, for political reasons. Which, or have you worked on any non-English NLP problems?

Esmé Manandise: Yes, but that was at IBM. So initially when I got the job at IBM, it was to take the natural language technology that Michael McCord had developed for English, and I was asked to take that technology and do it for the Romance languages. And the Romance languages at the time for IBM were defined as French, Spanish, Brazilian Portuguese, and Italian. But so I devised a way of doing more or less a universal grammar and use switches or flags, so write a common grammar and the code behind that covered those four Romance languages, and then since you knew at the outset the language you were parsing, then the flag would tell you, “Well, given this context, this pattern, then you need to apply now what applies to the source language.”

Christopher Phipps: And so peripheral to that, and this is kind of where I'm going with this question, is, how did you find non-English NLP resources? And what I mean is, were they demonstrably worse than the NLP resources for English? Were they harder to use? Were they harder, etc.?

Esmé Manandise: Yeah, as I said, actually, because it was within the IBM frame, everything is IBM. So at the time, I didn't look outside the IBM entity, and so all the… Whatever texts were available, they were already in-house. Everything was in-house, so there was no looking outside IBM, which is something I wouldn't do nowadays, because after four years at Intuit, before I implement anything or looking to implementing something, I will see what's out there.

Christopher Phipps: For context for the folks on Zoom, generally speaking, the NLP world revolves around languages from rich countries. So English has tons of NLP resources. The Western European languages spoken in Western European countries have reasonably good NLP resources. You go outside that region, foom! The availability and workability of a lot of NLP simply drops off. It just…

Esmé Manandise: Yes, correct, low-resource languages. Yeah.

Christopher Phipps: So let's go way back to when you left academia. How did you find your first job? I'm not sure you mentioned that.

Esmé Manandise: No, I mentioned it through, I was always in touch with my business advisor and she was sending me whenever she came across job offers, I mean, job listings, she would just communicate them to me. And that's how it happened. So for me, again, it is networking, but it's a type of passive networking. It's word of mouth, if you want to. And I think it works if people know you, you spread the word and you say, “Oh, I know such and such person,” so I didn't have to look for one or enter anything in LinkedIn, for that matter. They just contacted me. I was more fortunate.

Christopher Phipps: So how have you found LinkedIn in general? How long have you been on LinkedIn?

Esmé Manandise: Oh, for a long time. I think… I follow some people in the space of NLP. Typically, the people are more controversial because you really, in the end, I do NLP (right?), but I find that people do, the real practitioners of NLP also have been trained in computer science, and there are some spaces like natural language understanding, but I think they lack the understanding of the granularity of semantics that are needed to put into natural language technology. And so there are some people who are arguing that there's some limits to how much we can do with NLP and are, like, very controversial and I typically follow them on LinkedIn because they post things where they are open about their beliefs that there are limits to data-driven natural language approaches.

Christopher Phipps: Right.

Esmé Manandise: I think we have, there's a shift actually going on right now. I think we're going to go away from this blind faith in massive data to do natural language analysis.

Christopher Phipps: Interesting. Okay, great.

Esmé Manandise: [I think he’s 28:12] giving me the thumbs up. Thank you, Ezra.

Christopher Phipps: Yeah, traditionally, data scientists have loved big data, right? They always say, “Throw more data at the problem, and that solves it,” but of course we know that that's actually not true.

Esmé Manandise: Yeah.

Christopher Phipps: Can you think of some advice you've gotten in your career, particularly mid-career once you were already in it, that you thought was really useful?

Esmé Manandise: I'm going to say this as a woman here. Okay, and I don't know if it's appropriate, but I have to say it. My whole career I have been the odd token in the teams, oftentimes the only woman there. And what my career advice is that — let's say for the other female linguists, right? — stand your ground. Don't be intimidated. If you have something to offer, just discuss it in a cool, scientific way, and never think that you can't do the job. That's all.

Christopher Phipps: Fantastic. And let me ask you, have you been on hiring committees in your time in industry?

Esmé Manandise: Well, I mean, internally, usually, not outside. But within the companies I've held, I do what is called, assess job candidates, assess within the company people who want to go up for promotion. And typically, they’re never in the field of natural language, it's pure engineering work, but I have to develop that side to be successful. And if you are able to do a PhD in linguistics and develop all these analytical skills, you can learn anything. If you have the passion and the willingness to learn it, really go ahead and do it.

Christopher Phipps: And so what I'm getting at is, so when you look at a resume, how do you see that passion? What's the kind of things that jump out at you in a good resume?

Esmé Manandise: Well, this is the question about the hard and the soft skills, right? I mean, it's a little abstract. I would see how the linguist presented himself, herself in terms of their hard skills, right? But I think it's important to emphasize the analytical skills. Because I think Ezra mentioned that, it still irritates me when people ask me, “How many languages do you speak?” I just can't stand it because people still assume that linguistics is all about speaking languages. That has nothing to do, we well know, and lots in the audience only speak English (right?), and they're still linguists, they're professional linguists. So the important thing is precisely make clear all these analytical skills that are developed doing linguistic as a scientific systematic approach of language (right?), data and languages, and make that prominent in the resumes because these analytical skills are skills that you can use in software engineering, in design, in taxonomy development, in content architecture. And I think that linguists that are well-prepared can succeed in something that may be outside of linguistics, but it's possible. So that's what I would say. Oh, yeah, and then the soft skill, how do we assess, I would also see what type of soft skill could indicate the passion and the disponibility [willingness] to learn more, right?

Christopher Phipps: In general, over your career, do you attend things like meetups or conferences? Do you still stay connected to things like that?

Esmé Manandise: Yeah, I try to give one paper or two papers a year, but they typically, nowadays they want in NLP and engineering, but they always have to do with natural language.

Christopher Phipps: So can you name a couple of conferences that you generally like to target?

Esmé Manandise: So I did the one, the latest one was at the Florida Artificial Intelligence Society. The paper was published on one of the things we did at Intuit. There was another one hosted also by the ACL in Europe, EACL. It was about financial narrative. So I tailored the paper to the type of work I do and I leverage what I've learned by doing and then I abstract away and share. But in practice, typically the companies are more interested in patents. They would rather have patent submissions than paper published.

Christopher Phipps: Very true.

Esmé Manandise: Yeah, so I do at least one patent a year. An important thing is, that don't be a loner. In my experience, to do best, I always work in team and I do everything. The papers is collaborative, the patents are collaborative. And never present yourself as the one that always knows best and goes, ride your horse alone. Yeah, team is better.

Christopher Phipps: [unclear 33:46] yeah. Totally agree. So I want to ask real quick about work-life balance. Do you feel you've been pressured to work, and I mean just in general, to work more than 40, 50 hours a week?

Esmé Manandise: I haven't been pressured to do it. I'm a workaholic. I was already a workaholic when I was in grad school, which means that when there was social event in the department, I was one of the ones who never showed up. But this is a preference, it's my personality, but I haven't been pressured. I've just learned that… I have a family, and I've learned to just work off time when things are quiet or whatever around the house, but the pressure, not by the companies, no.

Christopher Phipps: Good. That's very good. Okay, I am going to save some time at the end for the questions that are in the chat, but let's go ahead and move on. We're going to move on to Rich Campbell. Rich, you've had quite a career, I was looking at your LinkedIn page, so why don't you give us the quick two-minute summary of where you started and where you are now?

Rich Campbell: All right. I got a PhD in linguistics from UCLA, and specializing in syntax, and I originally went into an academic career, and I spent 10 years in academic positions, two one-year positions, and then I went and got a position at a small state university in Michigan and got tenure there and was there for eight years total. About that time, I had some dissatisfaction with various aspects of my career and felt like I wanted to move back to the West Coast, which is where I'm from, and an opportunity fell in my lap. I knew someone who worked at Microsoft Research, a guy I went to graduate school with, and he arranged for me to come out for an interview, and I really didn't think much of it. I thought, “This is quite a long shot,” but they ended up offering me the job, and found it kind of hard to refuse. So my wife and family and I moved out here to Seattle about that time. I worked at Microsoft Research for five years, then I left and went to work for another company called Cataphora for nine years, a very different line of work, and then after that, Cataphora started to wind down. I found another job working for a company called Interactive Intelligence, Interactive Intelligence was swallowed up by Genesys. So I've been at that job under one name or another for about seven years, actually almost eight years now. So it has changed a lot. I guess that my experience in companies, working in industry, is small company, big company, medium-sized company. So I guess I've done it all, in that sense. And I work in a small group of linguists where we've sort of carved out a niche for what we intend to do.

Christopher Phipps: Fantastic. So it's great that you've had a variety of experiences. How has being a linguist been perceived or received by the companies you've worked at? Have you had to sort of fight to be recognized?

Rich Campbell: Actually, no. I was lucky that in all of these places I was hired specifically as a linguist and was expected to do linguistic work, at least at the beginning. So Microsoft Research, there was an NLP team in which we were developing various applications in a variety of languages. And I think at the time it was the grammar checker was the main product when I joined that was being worked on. When I went to Cataphora, they were looking specifically for linguists. There was a team of linguists under Dick Oehrle, who was the chief linguist. And we… It's interesting — in that case, we were working directly with customers, so it was a very different kind of work. And we… All of us having PhDs in linguistics or advanced degrees in linguistics was kind of a selling point for the customers. So the company actually charged for our time. We had an hourly rate, and we had to bill by the hour, and they could charge higher for a PhD in linguistics. So it was all part of the sales job. I mean, there was linguistics to do also, but it was also part of a sales job. And when I started out at Interactive Intelligence, we were doing text-to-speech and automatic speech recognition systems for different languages. They were specifically looking for linguists to compile the resources, work out phonology problems, that sort of thing. And that job has evolved quite a bit over the years, especially since the merger, but in every case, I was hired specifically as a linguist, so I didn't really have that fight. At least not… I didn't have to do it individually.

Christopher Phipps: And did you ever write code, or was that not really ever part of your career?

Rich Campbell: So I never wrote code that's used in a product, but I use Python quite a bit to write, to create tools that I or my teammates will use for the various kinds of analyses that we want to do. It doesn't go into a product. It's just for use among myself and my teammates.

Christopher Phipps: [An 39:24] example of something you've created?

Rich Campbell: You know, most of them are the sort of thing where I create it and use it for a few days until we go on to the next project, but for example, we're working on chat bots, for example, and voice bots, and — like everybody, I guess. And we have an engine that gives us results in a JSON format that we need to analyze those results. So oftentimes, I'll write scripts to take in those results, perform some kind of analysis on them, sort them in some way so that we can look at them and do our sort of qualitative analysis on it more fully. That's a very common kind of script that I would write.

Christopher Phipps: Fantastic. And you would write that in Python?

Rich Campbell: Python, yes. So I'm just going to anticipate a question that you're going to ask me about, what is a great piece of advice, years ago when I joined Cataphora, Dick Oehrle said, “Learn Python,” and I did, and it's been a great help.

Christopher Phipps: Do you work with other languages or people who write in other languages?

Rich Campbell: I work with a lot of engineers who also write in Python or they might write in other languages if they see fit. I don't generally have to deal much with those other languages in terms of looking at their code. Python is, even among the machine learning engineers in our company, in our division, Python is still the tool that's most favored, I think.

Christopher Phipps: Yeah, I think that's generally true across NLP, my experience. Now, have you worked with any other non-English natural languages?

Rich Campbell: I have, but again, mostly the rich ones. So the things we work on are driven by what the company sees as its needs, and these tend to be English, Western European languages, maybe Japanese and Mandarin. It's really been limited to that. But I have worked a lot on those, both at my current job and the previous job, and we're still doing a lot of that work, trying to expand our abilities into other languages, languages that the company sees in its sort of near-term future. So we're doing that a lot, actually.

Christopher Phipps: And do you, in your current role, since you've been, you're in a senior role, so do you get input into the kinds of products or services the company is seeking to produce or move into?

Rich Campbell: Yes, but. I get some input. I can't swear that it's all paid close attention to, but yes, we do get consulted on, somebody is developing a new idea for things we want bots to do in the next generation of bots, for example, we might get consulted on that. And so we have a project that might last several months where we go back and forth with them about how feasible we think this is, whether it's really well-conceived, that sort of thing. In terms of directly proposing what kind of products or we should do this or that, I'm not that senior.

Christopher Phipps: In general, as you progress through your career, do you feel like you've had the opportunities that other people in the company that are maybe engineers, etc., have had in terms of career advancement? So has being a linguist hurt you, helped you, or been irrelevant?

Rich Campbell: I think on the whole, I think it's helped me in that I think that because myself and the team that I work with are linguists, we sort of have this, and we're a group and we refer to ourselves as the linguists, and other groups that are within the AI division refer to us as “the linguist team.” Right? So we've sort of carved out this identity as being the experts in these certain areas. And I think that has helped us (right?), that we've been able to, like I said, carve out this area of expertise and people come to us with problems and propose new problems that they think we might deal with. And I think it's helped that we're kind of different. Right? I think that if there's one thing that I've kind of noticed in industry for linguists is that linguists are kind of treated as special in both a good way and bad way, and that we can benefit from that. And one of the ways we're special is that we know about things that they wish they knew about, and the other way we're special is that we don't know about things that they wish we did know about. So we get special treatment that way too.

Christopher Phipps: Fantastic. So I asked this question of Esmé, I'm going to ask it of you. Do you sit on hiring committees, and if yes, what do you look for in new applicants?

Rich Campbell: Not committees per se, but I do sometimes review resumes if it's something within our group or in a closely related group. And I think what I'm looking for — again, of course, it's going to vary a little bit depending on specifically what the company is looking for in this position, what's been approved — but I think what I'm looking for is someone who has experience doing linguistics, and sort of repeating what Esmé said here, somebody who has shows that they've engaged with linguistics a little bit or a medium amount, as opposed to somebody who's just a… This is going to sound like I'm putting them down, that's not what I mean, but somebody who's a computer scientist, an NLP person who has worked on language-related problems, that doesn't show me that they're necessarily engaged in linguistics. Right? And so I think for our group, we sort of have this identity as bringing this different kind of qualitative research to the table, and so I'm looking for that.

Christopher Phipps: And it's good that you agree with Esmé. It means there's a consensus. So I'm going to throw this last one out at you. What do you feel petty about in industry?

Rich Campbell: I feel petty about a lot of things. I think when you mentioned that before to Ezra, I think what crossed my mind is something that I feel petty about is the way that… Something that came up recently, I won't give any specifics, but the way that higher executives in the company come up with these ideas for various things that they want to do without really thinking about how it's going to work and who, you know, what it's going to take to do that. And, you know, this is just my personal attitude and, you know, this is a blanket statement that probably isn't true, but I sometimes look, think, feel like executives are looking for something to justify their job. I was going to say, I hope it's not being recorded, but I'm sure it is. So that's my pettiness. That's my main pettiness lately.

Christopher Phipps: Fair enough. Good. Good. Esmé, I forgot to ask you that question. Do you have something in industry that you feel petty about that you'd like to share? If not, that's okay.

Esmé Manandise: Probably a lot, but having been born in Europe and raised in Europe, if I feel petty about a thing, I usually immediately think, “Oh, well, if I were in Europe, I would have a union rep, and that's where I would go,” so I usually don't express anything about that.

Christopher Phipps: All right. Okay. I'm going to get to some of the questions in the chat now. Thank you, panelists, for your one-on-ones. One of the questions is about resources. So one of the things that I'll just speak for myself, I entered industry in the mid-2000s, and for me, I would have been a much better entry-level candidate if I had started now, if only because the resources for learning about NLP are so much better now than they were 10 or 15 years ago. Tutorials, Kaggle competitions, just books, even just the packages themselves, something like spaCy, that just didn't exist 15 years ago. You had to really, really learn… Like learning Python 15 years ago was way harder than learning now. So what I want to go — and Ezra, I'm going to start with you since you're the earliest career linguist — what kind of resources do you reach out to when you need to teach yourself something, etc.?

Ezra Wyschogrod: I think for general networking things, the special interest group, which we're, I think, all aware of here, Linguistics Beyond Academia was really incredible. I think particularly reaching out to the people that were the head of it, I think it's been shown in my experience, I think, that none of those linguists are above talking to a new career person. And it's really been a beautiful thing. I remember early on when I was really wondering what I was going to be doing with my life after a linguistics degree, reaching out to Laurel Sutton, who has a bunch of experience in the professional linguistics world, very willing to talk to me. And I think that's kind of been the feeling that I've had in reaching out to people. So I think definitely that special interest group was a really, really big thing for me. And I would say beyond that, I think LinkedIn, I think with caution has been really, really helpful to me, particularly because it allows you to see the career trajectory of different linguists that maybe are five or six years ahead of you. And I found that to be incredibly helpful. It's incredibly helpful internally, even within Amazon, where you can see what kind of roles people are going to and what kind of companies people are transferring to and what people's jobs were coming out of grad school. I think those two resources, I think, were incredibly helpful, and I'm sure there's more, but that's definitely what worked for me.

Christopher Phipps: Esmé, you work with a lot of, it sounds like you do a lot of just core coding. Do you find yourself reaching out to online resources, etc., to teach yourself how something works, like, say, spaCy, etc., or do you try to figure it out yourself? What's your method?

Esmé Manandise: It's a mix of both, but of course, since I basically, a lot of… I have to find solution on the go quickly when I'm programming something, so I use Stack Overflow a lot to check a few things. Yeah. And so you learn to do it and you learn to develop intuitions about what to trust, you know, quickly skim through it. But that's one of my main resource for on the spot clarifying, coding something. But one of the things that I've had to learn is to be very self-sufficient in this space, all the toolings that I have to use, the platforms, and you just do it. But I have to say, this is an anecdote, but it's interesting. I have a summer intern. She's a rising junior from Caltech in computer science, and she's working on a problem for me and with me on a CUI, Conversational User Interface. And one of the problem is intent classification, right, for customer care. And she had absolutely no background in NLP, nothing. Yet it's an NLP-related problem, a very important one for Intuit. And one of the resources, she took the initiative, she signed up on Coursera and some other online course, and she completed some NLP courses over the weekends early on. And these are resources that I would recommend to people early in their career as major in linguistics to look at what's available out there, and they were very well done and they're given by specialists. I've checked a few of them to see. I know.

Christopher Phipps: Rich, do you have any other resources you reach out to when you need to teach yourself something?

Rich Campbell: Well, I just want to second the idea about Stack Overflow, which I use practically every day. And also, Coursera is a great resource if you can find a course of something you're interested in. Other than that, I think that you can find a lot of things online, and everything's online now, right? So if it's a problem about some specific, Python-specific problem, you could just look into the Python documentation, which is all online, for looking up a particular module and figure out how to do it. And I use that a lot. It's just really, I think just being able to use the search engine and finding that stuff and knowing what to look for is very helpful. And then coworkers, I have coworkers that have a different background, and it's their job to know a lot of stuff that I don't know, so I don't hesitate to ask them.

Ezra Wyschogrod: Actually, and just to jump in and one more resource that you guys are causing me to think of is O'Reilly Books. And basically, they've been really incredible. For those that don't know, it's a publisher who publishes different educational books about tech and they tend to do it really, really quickly. Barebones, illustrations kind of stuff. I'm reading one right now about the VUIs, voice user interfaces, and they can be really, really cutting-edge. They don't wait for publication like a lot of other more corporate textbooks do, and that's been tremendously helpful early in a career.

Christopher Phipps: And I think many O'Reilly books are published both on a physical for-cost basis and given out as a free PDF.

Ezra Wyschogrod: That's right. Absolutely.

Christopher Phipps: It doesn't cost that much. Yeah. This is not so much a question, but a lot of us are working on chatbots now. It's just a big thing, and I just wanted to point out to everyone, and I would like to kind of start a discussion here with the professionals, is, I just saw a blog post, and I can try to find and put it in the chat, about a chatbot designer who had discovered Gricean maxims. And for those who don't know, Gricean maxims are these conversational principles about how people cooperate in a conversation, make things relevant, make them short, etc. And she wrote that, written up this really beautiful blog post about how she was using Gricean maxims to make her chatbot better. And the conversation starters is, what a brilliantly non-engineering expertise that is, right? That's not an engineer's expertise, but it's going to make a chatbot incredibly better if you have an understanding of that. For those of you working on chatbots, what kind of non-engineering linguisticky things are you bringing to those developments? Like understanding turns and things like that.

Esmé Manandise: One of the things that we are working, me and my intern, is the three classifiers that we have created, and trained after some model. We want to refine the distinction… It's a notion that people training in NLP and computer science are not familiar with. The difference between form and function is that you can express a speech act, what they call a dialogue, in many ways, and… For instance, let me give you an example. In the customer care, often there is this request for a live help and it is, “Give me a f- live person now, you f-,” and on and on and on. And the intent is feedback hate, right? But it's not different from saying, “Give me live help.” It's that the speech act is still the same and request for something, it just happens to be in the [unclear 55:22] abusive language, right? So this is one of the things that needs to be improved in all of the CUI, this linguistic notion of the distinction between form and function. And a lot of the strictly ML-based approaches to classification, intent classification, is just, skims the surface of the language without having really a deep understanding of this distinction. So, because you can add the same request, said in many, many, many ways, with lots of F, F, F, F, and other things. [unclear 56:00].

Christopher Phipps: That's brilliant. Yeah, fantastic. Yeah, so there's lots of, I think with chatbots, I think we're going to see an explosion in the need for pure linguistics, non-engineering pure linguistics, because designing chatbots, really you have to have an understanding of conversation and human language. There is as much, not resistance, but there seems to be as much anxiety in the linguistics world now as there was when I entered 15-some years ago about whether or not linguists really fit in engineering companies. I think we've got a pretty good sense from our three panelists that that's not true, that they do, but I want to go to the panelists and say, have you encountered anything that you would call resistance to being a linguist on the teams you were on, that you had to kind of overcome? Rich, you've already kind of addressed this, and I think you had a pretty positive experience, but let me ask Ezra and Esmé: do you feel that at any point you kind of had some resistance to, “You're just a linguist?”

Ezra Wyschogrod: Have you ever encountered that? I haven't, thankfully. And I think that that might have to do with the fact that the two roles that I've been at are teams of linguists. Right now I'm on a team of, I believe, seven, but beforehand I was on a team of a similar number. So there is a significant amount of, I would say, insulation if that culture exists within the company. I would say that, you know, I think part of that might come from, if that culture did exist in the past, of people being maybe a little bit confused about exactly why linguists are useful, and I think that that is actually becoming clearer and clearer as why linguists are particularly useful. And just to give a recent example, one of the things that Alexa is working on, of course, is multi-turn conversation. There's going to be a lot of give-and-take within Alexa. And one of the questions that you have to ask is, are people treating Alexa like a human? And one of the things that kind of manifests as is thanking Alexa and saying “please” and “thank you.” And that's something even, as an Alexa user, that I find. And that has been discussed recently, and that's something that linguists are bringing up to engineers, and that's something that if you're really on the engineering end of things, it's something that might not necessarily occur to you, but it's something that is being discussed by linguists. These kinds of conversations that engineers that I work with find really, really valuable are really, really coming from linguists. And I felt that our role has been, I think, clearly useful in my still very short career, although I imagine diachronically, it's not always necessarily been that way, and I can't necessarily speak about 10 years in the past.

Christopher Phipps: Rich, I forgot to ask you, do you engage in any kind of meetups or conferences or any kind of connections to a wider community?

Rich Campbell: Not on a regular basis. When I was at Microsoft, I did. That was a research-oriented position and went to conferences frequently and published papers. Since then, my work has been much more product-oriented, and it's really more haphazard. I go to things now and then, but not by any means on a regular basis.

Christopher Phipps: Fair enough. Do you do any kind of reach back or do you… Like I know people reach out to me all the time, just random grad students saying, “Hey, I'm interested in industry.” Do you find people reaching out to you that way?

Rich Campbell: Occasionally. Yeah. My professors or something might reach out to me and say, “We'd like you to come and talk about your experience,” kind of like this, right? “Your experiences in industry going from academics and industry, because students are interested in that.” So that does happen occasionally.

Christopher Phipps: And Esmé, you said you've got this intern. Have you worked with a lot of interns in the past? Is that generally part of your job?

Esmé Manandise: Yeah, every year I have an intern. Intuit is really actually an engineering company, so all the interns that I work with are people that are in computer science programs. They typically work on an engineering problem that I'm working on, but that uses natural language somewhere (right?) as input or whatever. I never stray far from that type of data, don't worry. But yeah, every year I work with somebody, and they always end up learning something about natural language.

Christopher Phipps: Oh, fantastic. Ezra, let me flip it on you. Did you do any internships?

Ezra Wyschogrod: I didn't, oddly enough. Maybe I should have. I had done sort of research in… Back when I was doing academia, I had done sort of research internships, but in terms of in the professional linguist world, I didn't. And it could be because I just wasn't aware of more pure linguistics internships that might've existed. Actually, I would say this is maybe somewhat related. Between grad school and my first job, I did actually do an internship that I think was more political in nature. It was with the Joint National Committee on Languages, which is an umbrella group that does lobbying for language- and linguistics-related causes for Congress, which unsurprisingly their center is here in D.C. So I've worked a little bit there, but I would say that it was very ancillarily linguistics. It was mostly congressional lobbying, which is a whole other world. But in terms of internships that are more, I would say the linguistics end of NLP, I wasn't really aware of it.

Christopher Phipps: So I'll ask this question very carefully, and you are all of course allowed to answer or not answer as carefully as you want, but I want to talk about salaries, getting paid. First question, have you ever asked for a raise?

Ezra Wyschogrod: Yes.

Christopher Phipps: Ezra, you specifically asked for a raise. So you started off at something, you were at the job. How long were you at the job before you asked for a raise?

Ezra Wyschogrod: I mean, I asked for a raise at the job offer.

Christopher Phipps: So the offer was X and you said, “I need it to go up.”

Ezra Wyschogrod: Correct.

Christopher Phipps: Why did you believe it was low?

Ezra Wyschogrod: It's a negotiation mindset thing. I would always assume that an initial job offer, they are, as they should, be trying to lowball you, and I think that's just a general job offer game that you have to play. I think that they've identified skills in you if they want a job offer, they are financially incentivized to employ you for as little as possible. That's just good business sense on their part. So of course, counter-offer is my mindset there. I would say that I think it's important when you've worked there for a certain amount of time, I'm not saying it's six months, not saying it's a year, but at some amount of time to reevaluate how much you make, especially if you're giving a lot to the team and you feel that you're not being requited financially by the role that you have. But I think that's certainly a separate question.

Christopher Phipps: And where did you learn that? Like, is this just a kind of a part of who you are, or did somebody teach you to be that way?

Ezra Wyschogrod: So I think sort of a negotiation mindset is a little bit about who I am, but I would say specifically, to talk about that, like upfront at the job offer, was something that had to be taught to me, because again, coming out of academia, I had no idea what the heck to do regarding job offers. That was actually came from a lot of my friends in college who, oddly enough, worked in things like finance, worked in consulting, where, you know, job offers and negotiation is really everything. And it's not really a linguistics stereotype, I would suppose, and I think that's somewhat based in truth. It was really kind of friends teaching me that. I think that is not something I've seen fellow linguistics friends do, and I think just general salary negotiation is something that is good for linguists and good for everybody.

Christopher Phipps: Esmé, same question. Have you ever asked for a raise?

Esmé Manandise: Only once in my life, actually, when I was at IBM, when I switched from Michael McCord management to David Ferrucci, since I had got my hands really dirty at working on all the coding in C, C++ from English parsing technology to the Romance languages, I thought, “Well, I know enough about [insights 1:04:53].” And I did. And you know what, it was so easy. They said, “Oh, no problem.” I was surprised. So it was very easy. So I have no recommendation, because Intuit gave me such an amazing package that I didn't have to negotiate. So I don't have recommendations there. And again, being European, we grow up, you know, with brackets for salaries, given this job description, I was never told to negotiate these things. We take salaries, given the job description for granted.

Christopher Phipps: Yeah. Richard, have you ever asked for a raise?

Rich Campbell: Yes, once. When I was teaching at a university and was offered the job at Microsoft, I asked the university to reconsider my salary. And they came back with an offer. And I said that wasn't good enough. And they came back with another offer, and that was much better. But there are other factors that they couldn't address, so I ended up not accepting anyway.

Christopher Phipps: You mentioned something that I think maybe I'll speak to briefly. Obviously, I'm at IBM, but I've been at other large corporations which have the same idea of bands. And not every corporation does this, but it's not uncommon for positions to be in a band. What a band is, is, you know, X number of dollars to X number of dollars. So if you're a band 9, that goes from 120,000 to 160,000. As long as you're in band 9, you can only get a raise up to that. If you want to go above that, you need to do the career move of moving up to the next band, and that involves all this career machinations and things like that, and typically involves different roles. Each band has a different role. That's certainly the way it is at IBM. That's the way it was at some other companies I've been at.

Ezra Wyschogrod: I would say that there's a couple of good questions, I think, posed by Alex in the chat that I think it was something I was passionate about mentioning anyway. And it's particularly about doing individual research on companies that you're applying to, and also salary ranges for entry-level positions. I certainly agree theoretically with that point. I think one of the challenges that I've had is that linguist jobs are rare enough, which makes sense. I mean, not everyone's a linguist, very rare choice, educationally and career wise, that a lot of those resources, like for instance, Glassdoor, don't have a lot of salaries on there. There just aren't a lot of data points. As a matter of fact, there are so little data points that when I looked at the salary range for my current position, the low side of the range was 60% lower than the high side of the range. That's a really big range. This is not like looking for first law firm job out of college, out of law school, rather, where it's a very set range. It can really be large just because there just aren't that many linguists out there. And that's frankly a challenge.

Christopher Phipps: Absolutely. And there's a good point to also be made that salary is of course dependent on region, cities, but it's also dependent on small, medium and large companies. Large companies tend to be much more rigid in their salaries because they're dealing with so many people, they can't have that much negotiation. They just can’t allow a 60% range, whereas a small company can often really go back and forth. It kind of depends on how ambitious and how comfortable you are negotiating that. I don't know that I can speak to entry-level salaries, like what is an entry-level salary? I don't know. I was never entry-level because I jumped from being a grad student to being essentially a product manager. That's a bit rare. So my jump was a bit unusual. But I will… I think sometimes it's nice just to mention numbers. Not everyone's comfortable talking about their salary, but I'm comfortable talking about it, so I will say when I was a grad student in 2004, and I jumped to a consulting company in Washington, D.C., I asked for $90,000 as a starting salary. And they gave it to me, and I'm mad because I'm certain they would have given me more. I did the opposite of what Ezra did. I did not negotiate. But at the time, I was making $14,000 a year living in Buffalo, so I was pretty happy with that. But that was more for a product lead role, so again, it wasn't entry-level. But I do just want to put some numbers out there to say: tech companies make a lot of money; you might as well make it too. That's my position. Somebody at that company is getting rich.

Ezra Wyschogrod: Sure. And definitely in the spirit of numbers, I will say this is, particularly from my first job search right after grad school, I was in a space where I wanted a job that was linguistics-related, and there was not many more requirements after that. I was looking at a very wide variety of things, everything from vaguely linguistically related consulting things, looking at tech, looking at politics, government, linguistics things, which is more relevant here around D.C. I was seeing starting salaries anywhere between $35,000 and $150,000, which if that sounds crazy, it is. There's a lot of different salary points. It depends on which kind of linguistics role you want to get into. And again, I think that this is a problem that ultimately gets solved by time, where you're beginning to get more data points, you have more linguists networking with each other, where those numbers become a little bit clearer. We're a little bit, I feel, in a period of kind of Wild West of employment of linguists. Just to give you an example, the job of Language Engineer at Amazon, which is my current title, that didn't exist five or six years ago. A lot of these roles are very, very new, so the salary numbers and salary cultural benchmarks, I think, are not… They’re a little bit fluid still. They're not quite ossified.

Christopher Phipps: Wendy is posing a couple of interesting questions in the chat. I just want to address them real quick. How much is the salary difference between large tech companies and small companies? Again, there are a lot of dependent factors, but I will say that my experience has been, small tech companies pay better entry-level than large tech companies. Large tech companies, again, they have their bands are kind of fixed. Small tech companies tend to be a lot more open-minded and you can negotiate better. I love small tech companies as an environment. I think it's just a fantastic place to be. The problem with small tech companies is, you don't know if they're going to exist 30 days from now. They go out of business easily, so you're taking a risk, but I do love the environment of a small tech company. The next question is regional differences. I actually can speak to this, and of course, the panelists can speak to this as well. But I've moved across the country four times in my career, so I've gotten a sense of the difference between costs. I will say that, again, especially at a big company, they will literally have a number attached to the city you live in, which says, “Whatever your baseline salary is, if you live in San Francisco, you get 12% more. If you move from San Francisco to Boston, you get 6% less than you were making.” They literally have this written down. They know, or at least they think they know, what the cost of living difference is, and they will adjust it for you. And a lot of times you have no control. Again, it depends on where you are in your band or some other things there, etc. But I will tell you right now, salary, San Francisco is, as far as I can tell, the most expensive place in the country right now, and so you do get a bump, but that bump doesn't afford. This may be a bit of an exaggeration, but honestly, I would not move to San Francisco for less than $200,000 a year. It's just insanely expensive right now. In my opinion, because tech is fairly diffused, you have tech centers. Ezra, you mentioned D.C. is not the best, but D.C. is not bad. There's Austin, Dallas, Boston, Seattle, San Francisco. You've got some choice there. But all of those are pretty expensive cities. Even Austin, Texas, is getting expensive now. Tech companies bring gentrification with them, and prices go up. It's just a fact. So let me throw that out there.

So some of the questions that are coming in are more, not so much about being a linguist in industry, but just being in industry. In general, sort of, Ezra, I'll pose this as the final question, and I'll just go down the line and ask all three of you.

Ezra Wyschogrod: Sure.

Christopher Phipps: Linguistics aside, salary aside, what kind of feel do you want from a job in terms of commute, in terms of office life, and what's around the office? What do you look for in a job?

Ezra Wyschogrod: I would say that as far as commute, to handle that first, as close as possible. Commuting is terrible, and a car costs a lot of money. I think that's understandable. I've been able to avoid having a car for my entire 20s, and I hope to keep it that way. From an office, I would say that I want an office that not only do people feel comfortable communicating with each other, but there's really, really good cross-team communication. There was a book that I read in my first job, thanks to Emily Pace, it's called *Team of Teams*. It's written by General McChrystal, and I think it's a really, really good example of a place that I want to work in, which is having teams that interact really, really well with each other and not being siloed within each other. And one of the things that I liked about Expert System, one of the things I like about Amazon, and I would hope to have in future roles as well, is teams that are comfortable interacting with each other, and not just through choke points. I think that's something that, from a corporate structural point of view, is really, really important. As far as other things, just general flexibility, being able to get off for religious holidays, relevant to fellow Jews and definitely to Muslims as well, and I would say also making it really, really clear how one moves up. I think that kind of clarity is really important. We do have that at Amazon, which has been great. It doesn't always necessarily happen, so a place where, if your career progresses with that particular corporation, knowing how to do the jump.

Christopher Phipps: Esmé, what do you look for?

Esmé Manandise: I think I would second what Ezra said about the team. I already mentioned that earlier. For me, it's who I work with and how they engage with me in a non-conflictive fashion is extremely important. I like to be able to discuss whatever is going on — implementation, coding, problem-solving — in a non-conflictive manner. That's the most important thing, and I want always the group to be accountable as a group for whatever happens. Above all in the field of engineering, when there are problems, it's collective, not singular, anybody. That's very important for me. Dialogue and also respect for my expertise. If somebody did not respect my expertise and belittled it in any way, well, I would not go for that. I would be very outspoken about it. And so basically, no discrimination of any type.

Christopher Phipps: Fantastic. Rich, what do you look for?

Rich Campbell: I would definitely second the idea about teams being able to work together. I think that's very important. Being able to work with your teammates, you know, that these are people you can get along, not just work with them, but you have to have water cooler time. Right? And so there has to be some kind of chemistry fit there as well. And I have worked remotely for 17 years, so I don't commute, and so the fact that my company is located 2,000 miles away from where I live, I don’t… I've been there a couple of times, but it's not a big deal. If you don't have that opportunity, I would look for what life is like around where you're working. That's why I came to Seattle. I mean, that's why I left my academic career to come here. Personally, if I'm looking for a company, I'm looking for a company that's going to let me stay here.

Christopher Phipps: That's a great point. We're living in a world where work from home is very popular. I've been working from home for five years, so it's becoming more of a thing. We’re basically at the end of our time, and so I just want to end with my impression, which is, all three of our panelists today have had a pretty positive experience in industry, and I think that's a really good lesson for everyone who sat in on this to take away is, there is a role for you. And academia is suffering a lot right now. I don't know how many of you listen to academic Twitter, but oh, my God, it's like a nightmare, hellscape right now. I hope it's not really that bad, but it sounds like industry is a heck of a good choice for a lot of linguists right now.

Laurel Sutton: Linguistics Career Launch 2021 was a one-month intensive program intended to familiarize linguistic students and faculty with career options beyond academia, in business, tech, government, and nonprofit organizations. Videos of all our recorded sessions are available on our YouTube channel. LCL 2021 was organized by Nancy Frishberg, Alexandra Johnston, Emily Pace, Susan Steele, and Laurel Sutton. You can get in touch at linguisticscareerlaunch@gmail.com.