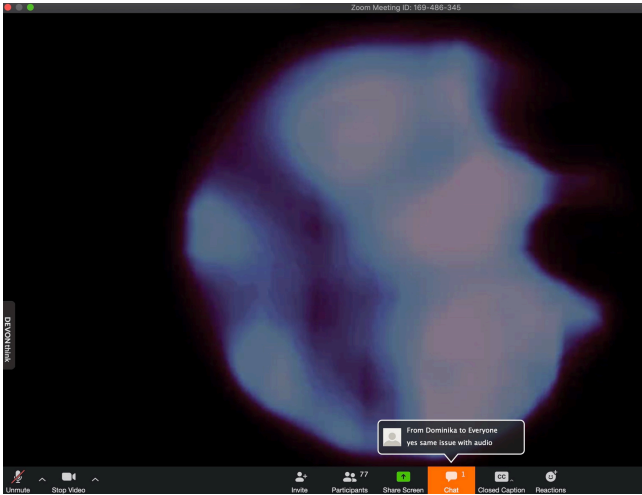




MIRABAI KNIGHT

Interview Date: January 20, 2023

Image Description: Text reads "The Remote Access Archive" atop a screenshot of a Zoom shared screen, which shows a work of art by Yo-Yo Lin. The art is a white and grey blob on a black background.

The bottom shows a series of grey buttons, along with an orange chat button that is lit up. A speech bubble above it "From Dominika to everyone" says "yes same issue with audio."

KEYWORDS

2010, academic inequality, audio, audio transcription, captions, Communication Access Real-Time Translation (CART), collaborative access, Discord, Plover, pre-COVID remote access, remote work, social media, stenography, live streaming, video chat, Zoom

IDENTITIES GIVEN

white, genderqueer

LOCATION

United States

Introductions

Kelsie Acton:

I say with confidence, but the real reality is that I'm not the best person to ask about audio...

Mirabai Knight:

Okay.

Kelsie Acton:

It sounds alright to me. So yeah.

Mirabai Knight:

Okay.

Kelsie Acton:

Cool. So could you tell us your name, and where you currently call home?

Mirabai Knight:

My name is Mirabai Knight, and I live in New York City.

Kelsie Acton:

And what words would you use to describe your race and gender?

Mirabai Knight:

White. Genderqueer, I don't know...

Kelsie Acton:

Cool. If you're okay with it, because we're using video, are you okay to give a little bit more of a visual description of yourself?

Mirabai Knight:

Yeah, I'm like a forty-something nerdy-looking white person with little glasses and short, messy brown hair.

Kelsie Acton:

Awesome, and, as usual, this is Kelsie doing this interview, I'm a white woman with brown hair pulled back, and clear glasses, and the walls behind me are still the depressing magnolia yellow.

So thanks, so much for chatting with us today. Would you consider yourself a disabled person, or a person with disability? However, you'd like—

Mirabai Knight:
Not currently.

Kelsie Acton:
But would you consider yourself to be a part of disability community or culture?

Mirabai Knight:
I'd like to think so. I mean, I'm, you know, it's my profession, so. And I do have many disabled friends. But you know, I think it's, it's important to be somewhat delicate when negotiating those lines. So, I'll say: I have a ton of respect for the disability community, and many, sub-communities within the sort of larger umbrella of the disability community. I have a lot of respect for, you know, disability culture and disabled activism and stuff like that. But I don't know if I necessarily say I'm a part of it per se.

Kelsie Acton:
You mentioned your profession. Can you tell us what that is?

Mirabai Knight:
Yeah, I'm a real-time stenographer, I'm actually a certified real-time captioner.

Becoming a Stenographer

Kelsie Acton:
Brilliant. So tell me about that work, and in particular, what it might look like in person, and also how it might look online.

Mirabai Knight:
Okay. I've been doing this full-time professionally since 2007, and it's always been a mixture of on-site work and remote work. You know, when I show up on-site, sometimes I'm capturing to a big screen, sometimes I'm, I think frequently, more often than not, I'm captioning to the Internet and

someone else is receiving those captions in a web browser or elsewhere in the room. So I'm getting room audio, but I'm sending captions to someone else in the room, and sometimes I interact with that person, sometimes I don't, but you know, sometimes I also have people sit next to me, and they read off my screen, or sometimes I provide tablets or cell phones for people to read my captions from. It's variable sometimes. Very rarely I've done sort of like walking around captions. That's a little trickier, but it can work.

And then, when I do it online, I often do it from home, though I can do it from anywhere with Internet access and sometimes through Zoom, but sometimes it's through other streaming audio or video services.

Kelsie Acton:

Awesome. So tell me a bit about, if you're okay with it, tell me a bit about that work, and what kind of preparation you need, and why that, preparation quality matters. Sorry, these are very pointed questions, because I know you.

Mirabai Knight:

Yeah, Sure. Yeah, I will. I mean, the amount of preparation needed for a given job is variable, and I think the way individual captioners deal with prep material can vary. I, personally prefer to put most of the material that I get into my dictionary fairly close to, like, right before the job begins. So I'll usually start prepping about an hour before the job is supposed to start, because steno is a phonetic mnemonic system, which means that I will have to be sort of like making little memory tags for various proper names, proper nouns, jargon, etc. And for me, I find it most helpful if I'm making those entries in my standard dictionary right before I use them, whereas if I do it the night before, it's easier to forget a lot of them, and so some of that prep work winds up being wasted. I know some people don't feel comfortable unless they get all the prep work several days in advance and then do it ahead of time, and then they show up already ready. That's just not the way my memory works, so you kind of have to just play to your strengths.

Kelsie Acton:

Cool. And so, yeah, can you describe how that sort of prep work translates into the finished product?

Mirabai Knight:

Yeah, I mean, I also use several sort of mnemonic aids to help, you know, get the transcript as accurate as possible right out of the gate. So, if people give me— so I would say the most useful thing that I get is, you know, a list of potential speakers, of proper names, proper nouns, terminology that's going to be used during the event, and also if there's any kind of like fixed material that anyone is going to be reciting or reading aloud, that's incredibly helpful.

Because I would say one of the things that I encounter over and over again, that people don't necessarily know is that when you're reading prepared text aloud, you tend to read 150% to 200% times faster than your ordinary speaking speed. And so, I'm fast enough to keep up with the vast majority of people when they're speaking off the cuff. But many people, if you put material in front of them, and they read it off the page, are going to be speaking double their regular speed, and sometimes that is way too fast for me to actually catch accurately. So, in that case, I will either have the... hopefully, I'll have written material in front of me, and I'll either have it for reference and be able to sort of like caption it quickly from the screen, because having it there it means that I don't have to just like listen and then transcribe it, I have it in front of my eyes, and I'm also listening. Or, sometimes, if it's very complex, thorny material with a lot of proper nouns and stuff, I will just sort of have it queued up ready to paste in line by line. So I would say if there's any amount of fixed or frozen material, giving that to the captioner in advance is incredibly helpful. Yeah.

Kelsie Acton:

That's amazing. I learned something new, as an access person who's been doing this for a number of years. So thank you.

Mirabai Knight:

A lot of people, it just doesn't occur to them that they're just speaking twice as fast when they're reading as when they're trying to think of what to say.

Kelsie Acton:

So tell me about the kind of training that goes into being a real-time stenographer.

Mirabai Knight:

Yeah, this is a big issue. It's very haphazard. I mean captioning came out of the court reporting system in the United States after the passage of the ADA [Americans with Disabilities Act]. I mean, that's not strictly true. So there, there are some experiments in television captioning before the ADA was passed in 1990, and they started to do sort of like, a very few, I think, with PBS [Public Broadcast Services] and a few companies had been doing television captioning on a voluntary basis. In, I think the seventies and through the eighties, but, it was very, you know, it was mostly offline capturing, there was a very small amount of live captioning done, and it was very experimental, and this was, these were court reporters, who were sort of participating in these early captioning experiments. But it wasn't until the passage of the ADA in 1990, that real-time captioning, especially for individuals as opposed to for broadcast television became a viable career, because suddenly people were able to say, I have a legal right to real-time captioning access. And you know my university, or my school, or this concert venue, or whatever, is legally obligated to pay for the captioning.

Now, it's not as simple as just going up and saying that, it's often still a fight. There's a lot of infrastructural problems. There's a lot of, I mean, you could go into this for, you know, years of how it actually came to be that a lot of people wound up getting real-time caption access but the fact the matter is people started working primarily or exclusively as real-time caption providers for individuals, or for roomfuls of people as opposed to television consumers, after the passage of the ADA in the 1990s.

I went to steno school starting in 2005 and graduated in 2007. I knew at the time that I only wanted to do real-time captioning. I did not want to do court reporting of any kind. I had no interest in working in the legal system, depositions, transcripts, all that stuff, sounded excruciating to me, but, there was no way to get training for captioning per se. So I got my training through a court reporting school. Some of the teachers had experience with real-time captioning, not very much. The captioning side of my education was mostly something that I had to go out and find on the Internet. I did a little bit of shadowing of a professional real-time captioner after I graduated, and the first, I think the first two semesters that I captioned were sort of subcontracting with her, and then she started working in New Jersey, and I continued working in New York independently. So I mean, I'm very lucky in

that New York City, which is where I'm based, has, I think, like 20 or 30 different universities.

And so when I— basically when I qualified and left steno school with my, you know, you have to basically attain a speed of 225 words per minute to get the speed certificates, leave steno school, which is what I got, but I was working at an offline television captioning firm all through steno school, and I was concentrating on making my real-time clean, which is very different from what court reporters do, which is, they're just trying to sort of get a stroke for every word. And they're focusing on being able to reconstruct a clean transcript after the fact. Whereas I was focusing on being fast enough and accurate enough to have accurate, clean, complete, concise, verbatim captions right out of the gate. So that was also like a different approach that I was taking in terms of getting through steno school as opposed to my fellow students, were working on, you know, looking to go into court reporting after getting their 225 certificate.

So, once I attained the speed that I was looking for with sufficient accuracy and with a sufficiently robust dictionary of general terms, not just legal terms, because I kind of had to build my dictionary up from like 30,000 words to about 150,000 words over the course of my, I mean I incorporated some external dictionaries, I put a lot of stuff in while I was doing the television captioning, I did a lot of sort of stuff on the side, I brought it in from variety sources, but I basically like started with a 33,000 dictionary and then started working with 150,000-word dictionary.

That's when I basically sent out a letter to all the universities saying, "Hi, and if your students need real-time captioning, please contact me". So that's how I got my first gigs after I stopped subcontracting with the other captioner who moved to New Jersey.

Kelsie Acton:

Gotcha. I wanna go back to the thing you mentioned about finding information about captioning on the Internet. Can you tell me more about that?

Mirabai Knight:

So I mean, I learned about the existence of this career when I was doing recording transcription. So this is around 2004. I just moved to New York,

having trouble making ends meet, and I got a job transcribing the sort of unedited audio for reality shows and you know, I was one of the faster people at the firm. But I was still really struggling, keeping up with even what felt like a very slow rate of speech, and I was like there must be a more efficient way of transcribing than QWERTY, because I'm a pretty fast QWERTY typist, and I'm still like really struggling here, so I went on Wikipedia and found the entry on stenotype, and it was in that entry that it mentioned that some people learn steno to do captioning for college students.

At the time I was in the process of applying for a master's degree in British and American literature program. And I got in, and I said to myself, what the hell am I gonna do with this? How am I gonna survive while I get this? How am I gonna, like, pay for the degree itself? And how am I gonna like, get a paying job that I actually want to do after I get the degree, like, it sounds like a lot of fun to go get a degree in British-American literature, I don't want to be a professor. Like, academia is incredibly broken and financially exploitive. I'm not independently wealthy, this is not a viable career option. But, so when I saw that I could actually make a living captioning for other people who perhaps are more qualified to get a paying career than I am in academia, or with a master's degree, or whatever, and I could like be at a college classroom and caption what I hear and make a living at it. I was like, that's what I wanna do!

So that's when I found the court-reporting school and started going there. And then, it was just sort of a lot of, you know, obsessive Googling and trying to hook into the court reporting/captioning online culture, such as it was, which was very rudimentary. There's weird demographics involved in both court reporting and captioning... Anyway. So there's just a lot of self-directed research and digging around and trying to find people who could give me information on how to take a court reporting program and turn it essentially into a self-directed captioning program.

Open Steno Project: Why?

Kelsie Acton:

Very cool. So all this is prep for me to ask you: can you tell me a bit about the Open Steno Project?

Mirabai Knight:

Yeah, so this has been something I've been working on since, I mean, I think it got its name in 2010. It really sort of started in 2010. But I was thinking about it even while I was in steno school, because the fact of the matter is, you know, I went to a for-profit steno school/court reporting school. I got financial aid. I was there for a year and a half. It took me a year and a half to get from 0 words per minute to 225 words per minute, which is when I could leave with my certificate. I didn't get the associate degree, because I already had a bachelor's degree, so. I just got the speed certificate, but it took me a year and a half to get from 0 to 225, and I was very grateful to have had my godmother help me pay for a steno machine that I got off eBay for about \$1,000. I got considerable financial aid, and I was using software that was sort of free for students (with an asterisk). It basically was broken in such a way that you couldn't use it for court reporting, but you could use it for preparing text transcripts. This is sort of one of the competitors to the big, you know, the big market holders of steno software. There's like three of them, and this third one was like well we'll give it free for students as long as you can prove that you're enrolled in a court reporting program you can use it to practice, and it turns out it wasn't broken in the way that I was going to be using it for this offline captioning job. So I was able to use it for that, even though I would not have been able to use it for court reporting. So I was very lucky.

But the fact of the matter is when I left school, you know, I no longer qualified for the student software, I had to buy \$4,000 professional software. I had to buy— Well, I think at the time I bought like a \$2,000 semi-professional machine but I — it was quite bad. I wound up eventually upgrading to a 4 or \$5,000 professional machine. It's the same machine, I mean, I've replaced it over the years, but it's the same sort of machine I paid about 4 to \$5,000 for professional steno machines ever since, and I've been now doing this for 18 years.

And also, I was quite honestly one of the few people who left the program with the skills required to get a job. And I realized that this for-profit steno school was making a ton of money getting people to buy these expensive student machines by expensive student software, pay a lot of money in tuition, grind and grind and grind for years and years and years and years and then drop out when they were out of money, and have literally nothing

to show for it. To the point where it's basically their business model. And I saw that this was pervasive, like it wasn't just this school. And this school honestly, as for-profit court reporting schools go, I had a pretty good experience. I feel like the teachers were relatively good teachers, and fairly qualified, and I learned what I needed, I got a great career out of it. I personally have no complaints.

But the entire steno student model, with very few exceptions, just seems to be based on a really exploitative, financially exploitative, structure, and they were just depending on— like all the data I can find on this is that there's like an 85% dropout rate. And the vast majority of those people just have *nothing*, nothing viable they could do with those skills because they don't have a machine or software that they can use, like even if they got up to say 200 words [per] minute when they dropped out because they couldn't get 225, they can't use those skills for anything because they don't qualify for student software, because they're no longer enrolled students. So they would have to buy \$5,000 software, and they'd have to buy, you know, these incredibly expensive machines. It's just incredibly broken, and also just like, you know, the schools are making money, but— though actually, a lot of schools are not making money, a lot of schools are failing, despite this exploitive business model, and the number of people using steno was dwindling. And like, I was really in love with this technology. I saw how beautiful and useful it was, and I just wanted to get more people using it.

And I realized that it was useful, not just if you wanted to be a court reporter or even a captioner, but if you wanted to just sit at a computer and input text, you know, whether because you're writing a novel or because you want to chat with your friends or because you want to use text to speak because you don't use your voice for whatever reason or because you wanted to play video games or you know—like every— or do data entry, or like every other 1 million different kinds of things you do when you're inputting text or commands or symbols, or whatever, into a computer, can be done really efficiently and ergonomically, with steno as opposed to QWERTY. Because QWERTY is also, like I knew so many people from the QWERTY transcription world who had just permanently damaged their bodies by trying to make a living, doing QWERTY transcription, because QWERTY is *horrible* on your hands and arms, and shoulders, and everything else.

Benefits of Steno

Mirabai Knight:

Steno is, is like six times more efficient. So you're doing six times less work compared to QWERTY. And it's also like the actual body motions of steno is more like playing piano than like typing; there's much less stress on the tendons. There's much less stress on the wrists. Most of the force comes from the arms and shoulders rather than from the fingers, and if you set it up correctly, and ergonomically. Like when I was doing QWERTY transcription, I was in acute pain after four or five hours of work every day. As soon as I switched to steno, I was suddenly able to work for 10 hours a day at like 200 words a minute with zero pain, zero breaks, no problem, and then that's been true 18 years later. I have zero pain.

Kelsie Acton:

Woah!

Mirabai Knight:

After captioning for like 10 hours a day, I mean sometimes my knees are stiff because I've been sitting with my knees bent, but my actual like hands and arms and shoulders and neck and all that, like zero problems. I do use an ergonomic machine. The professional \$4-5,000 machine I have is an ergonomic, split, tilted machine. But it just requires so much less force, it requires so much less like twiddly finger movement. And the actual force of the stroke comes from a different part of the body. So it's just, it's just much more ergonomic and less harmful, destructive than QWERTY typing is.

What is the Open Steno Project?

Kelsie Acton:

Wild. Yeah. So, you've told us about the purpose of *why*, tell us what the project is.

Mirabai Knight:

Right, [haha] okay, so, so the project which I was like, it is ridiculous, it is a damn shame that people are learning this job but then, not being able to get to the point where they can actually make money from it, and are losing all the time and money invested in what they've learned, and then just

basically scrapping it. And you know, are leaving school with tens of thousands of dollars in loans, nothing to show for it. It's also crying shame that the number of people who know this incredible technology is dwindling with each successive year, and not enough people are learning it. And it's a crying shame that so many people are using QWERTY, which is a really destructive and inefficient text entry method to do like all of these things that you need to do, because so many people are spending 8 hours a day sitting in front of a computer, and none of these people are using like this incredibly ergonomic, efficient, text entry method, steno! Which is also fun and exciting, and interesting. So I was like, I don't know any programming, but I want there to be an open source standard software that works with free, like free or cheap hardware, so, I guess I have to learn Python.

I tried learning Python and it did not go well, I did not get very far trying to learn on my own. So I'm like, okay, maybe I need someone to teach me Python. So I was working in a co-working space in Brooklyn, and I put a little sign up in the elevator that said "Python tutor wanted please", and a guy like a couple of floors up who is part of a tech maker space contacted me and he's like, "Hey, I just moved to New York. I've been working for the MIT Media Lab, I'm pretty good at Python, I can be your Python teacher". And we started off, and tried to teach me Python, and I was not a quick study. It did not come naturally to me. However, he got interested in the project, and at a certain point, he was like, "Rather than teaching Python, how about I just code this project for you, since, like the only reason you want to learn Python is so that this can exist. Why don't we just cut out the middleman? You don't have to keep banging your head against this particular wall, and I'll just make this for you". I was like "that would be amazing". So I paid him as much as I could out of pocket. He also put in a lot of unpaid time and labor, and he got this project to a point where it was working in a rudimentary way, and this was also around the time when the first N-key rollover keyboard that cost less than a \$100 came on market, which was really good timing. It was like the Microsoft gaming keyboard, and it was like Microsoft trying to sort of like expand into the PC gaming market. And so for the first time, you could buy a keyboard for like \$25 that would actually work as a steno machine with this new software that my new friend had just built. So that was serendipity.

So he had to leave the project, for you know, he moved across the country, but then another fabulous stroke of luck: A guy called me up and was like,

“Hey, I saw that you've been posting about this project online. My girlfriend just started steno school. I work at Google, and you said that the guy who's been building it for you had to leave, can I take over?”. So it's like “Hell, yeah, you can!” So he came, and he started work. We started working on it together, and you know I had all these ideas of like, how I wanted our software to be different from the horrible, broken, terrible \$5,000 standard software that I've been struggling with professionally, and he worked on it for a while, his girlfriend did actually did wind up dropping out of steno school like so many people do, and he left the project also.

But at that point, he got it to a pretty good place, and we started like a community, and like people had started coming in and like teaching themselves. And it's sort of it, you know, it's been poking along little by little since then. I think that when he left it, the software was in good enough shape that, I think either I was on the verge of switching over to it professionally or was like a year away from switching over to it professionally. I've now been using it exclusively. Like I stopped using the \$5,000 professional software in... I want to say 2012? No, no, no... it was maybe 2014. I don't remember exactly, but I mean I've been using the free software exclusively because I mean...can I tell you, the moment that made me switch?

Kelsie Acton:
Yeahhh!

Mirabai Knight:

There's a lot, like there's a million reasons why I switched. But the like, the absolute crystallizing moment that made me switch my \$5,000 software to this free software that we just been putting together out of like chewing gum and scotch tape and popsicle sticks... I was captioning at the United Nations on my \$5,000 laptop on the big screen, and there was like a bunch of dignitaries, and there's like, a children's choir singing and everything, and I was captioning. And my software froze. And it froze for like 30 seconds, and I was still, I was like typing away, captioning, captioning, captioning, nothing was coming up on the screen, and then all of a sudden, it all just went [gibberish noise] and everything that I've been captioning just like ran out on the screen in the space of like 30 seconds. And this happened like three times within the course of an hour. And I did some digging, and I realized that that had happened because the DRM (Digital

Rights Management) built into the software did not have an Internet connection because I was in the UN. And so it was refusing— it was basically like holding my steno strokes hostage because it couldn't send the she actually paid for this software ping to the server while I was capturing at the UN. And I was like, this is ridiculous. This is horrendous. This will not stand.

So, it wasn't like right then that I switched, but it, that was the point which I was like I need to stop using this frickin' \$5,000 software that is terrible. And it was designed for court reporters anyway, it was like there was a million things wrong with it. It did not do what I wanted to do, but I was like, I'm done. So I've been using the open source software professionally, I think... I want to say it was like 2014 and [20]15. I can look it up exactly if you want, like the exact date, but I've been very happy using the free software that we as a community have basically built. And I've put some of my own money in, I would say that the programmers that have worked on it have put vastly more of their own time in than I ever could have paid for out of pocket.

And it's cool, and we've got like 6,000 people on the discord now, we've got some people like teaching themselves, you know, using steno. A guy just did a presentation on how he uses steno for programming, I've written two novels in steno using this software. We've got a lot of hobbyists and autodidacts. I mean, I think the missing component is we don't yet have a robust tutorial system that will take you from the beginning to walk yourself through. So a lot of people who managed to sort of get into Steno, they're people who are just really good at teaching themselves hard things. And I wanna make it a little more accessible for people who don't necessarily have that very specific skill set. But I'm still pretty proud of where this, where the software is at, and also how many hardware people have come in and started building and selling their own open-source hardware solutions. There's not like half a dozen steno machines that, rather than \$4,000 are now like \$100 to \$200. And they work great. In fact, I like I ordered one of these new \$4,000 standard machines, and it took like 8 months for it to be built and sent to me, and my old one had broken and so as a stop-gap, I actually used one of these \$200 machines professionally for almost a year, and it, you know, it wasn't ideal, but did the job. I didn't have to stop working for 8 months.

Kelsie Acton:
Yeah!

Mirabai Knight:
So, yeah. I'm very lucky.

The Steno Community

Kelsie Acton:
So I'm just gonna pull you back to you, talked about a discord, a community. How did this start?

Mirabai Knight:
I mean, I've been like, even when I was in steno school, I was blogging about my ideas, for, like what an open-source steno software system should be like. And then, when I saw options, for you know, basically, when I realized that affordable N- key rollover systems were coming on the market, I was like, "Oh, we can turn this into a Steno machine". So I started blogging about that, and I mean I'm not sure how people found the project exactly. People just kind of showed up, and we just started building stuff together. So there were various different forums, Google groups, and you know, stuff like that. I would say the discord is sort of like the hub of the Plover and open-steno community right now.

Stenography, Accessibility, and Disability Justice

Kelsie Acton:
Amazing. So I mean, like, I'm very excited, like the nerdy stuff about the software makes you really happy. I also want to ask about from an accessibility point of view. Why is it important to preserve steno skills and make them accessible?

Mirabai Knight:
I mean, this is something that I've had in mind because I work in accessibility, because I think that disability justice is important. And it's a difficult question to answer because there's a lot of different perspectives that I can come from answering it. I mean access for Deaf and hard of

hearing people is important. Obviously. Just the demographics of like the population, you know, one in three people over 65 have some measured hearing loss, and the number of people over 65 growing all the time, and a lot of those people also spent their youth like going to really loud rock concerts so that level might even go up. And the vast majority of these people are not going to be in a position to be able to learn sign language when they lose their hearing. I mean, that's just – it's an unreasonable expectation, even if they had all the goodwill in the world to want to do so, which most of them do not.

So captioning is a very important accommodation for late deaf and late hard of hearing people who you know, lose their hearing. It's also important. I mean, like I said... So that's one accessibility angle is that there aren't enough like captioners to sort of fulfill that, and like obviously auto-captioning certainly has its uses, and it is useful in many situations, and it's getting better all the time. I'm still somewhat skeptical that it will be able to replace live captioners in all situations. I think there will be an unmet need, probably quite a very large unmet need for live captioners, even with continued improvements in AI speech recognition. So that's one, so like what I do. I think we need more of us. There aren't enough of us.

Accommodating Non-Speaking Individuals

Mirabai Knight:

Another angle is, as I mentioned before, people who don't use their voices to speak, for whatever reason. Whether because they have some kind of issue with their physical voice box, whether they're non-speaking, you know, for various intellectual reasons, or like you know, there's people on the spectrum who speak at some times, and don't speak at others. There's lots of different reasons why you might not use your voice to speak, but AAC (Augmentative and alternative communication) is an appropriate accommodation for some people, but people who want to be able to speak at the same rate as [typical] conversational speech and have the same sort of conversational fluency as people using their voices to speak, to be able to like, not oblige people to stop and wait. I mean, obviously, there are good things about forcing conversation to go at the pace of the person who is, you know, dictating the terms of the speech. But there are people who just want to be able to have that sort of flow back and forth that

you can do with your mouth if you're using a mouth to speak, that you can't necessarily, for using your fingers to speak.

But steno eliminates that barrier, because with steno you can fully type at the rate of speech. I'm certified at 260 words per minute. The world record is 360 words per minute. The typical rate of speech is around 180-200, though some people's, you know, the rate of speech goes up and down. It varies from individual to individual, depending on what part of the world you're in. But you absolutely, if you're a competent stenographer, you can absolutely type at the same rate that people speak, and I think that that is a real untapped benefit of steno for people who want to have conversations at a typical rate of speech.

Employment of Blind and Low-Vision Folks

Mirabai Knight: There's also, I've done a couple of at least, there's one talk that's online, but I've talked about this sort of in other places as well, about the potential like... So people, Blind and low-vision people, are historically very under-employed, and steno has actually been to some degree like a traditional (before real-time steno came around like court reporting and other like stenographic, like secretarial work and depositions and stuff), there's been a small but like significant sort of contingent of stenographers, of Blind stenographers, historically. There's some blind captioners, I know, one in Italy who uses Plover actually, he uses the sort of midi--like piano keyboard-based steno input system that they use in Italy with Plover. So he might be an interesting person to talk to. And there are others, Blind captioners, Blind court reporters, Blind stenographers. So I thought it was very important that when we, you know, do our open source version, that we not only make the software accessible to screen readers, etc. But we also aggressively sort of like, seek out people who are looking for potential employment in stenography who use screen readers. Braille displays, etc.

Physical Accessibility

Mirabai Knight:

Then there's the, you know, in talking about disability, accessibility the sheer ergonomics like I mentioned, of steno as opposed to QWERTY, that, like so many people, are like really messing up their bodies and causing themselves chronic pain using the traditional QWERTY keyboard that they could avoid if they switch to a steno-based system there may be others.

Deaf Culture

I mean, there's also sort of like “cross-pollinations” of some of those things that I just mentioned, like, for example, in mixed deaf and hard hearing circles, like— or even mixed Deaf, hearing, hard of hearing circles, where you have people signing ASL (American Sign Language) you have interpretation, you can have a captioner, and you can have people like outputting steno text to written English, there's, it sort of opens up the potential conversation modalities in really interesting ways.

I have never actually like, for example, worked with a Deaf interpreter, but I can see say, if you've got a captioner who is fluent in, like receptively fluent in sign language, who is captioning whatever is being spoken for the purpose, for the benefit of, well, for the benefit of the room, for everyone to see whatever is being spoken aloud in written English. And then the deaf interpreter is taking that written English, and perhaps translating that into various registers of sign language for a particular Deaf client. I can see that being sort of a real, fruitful partnership because I know that there's a bit of, it's a complicated subject that I don't necessarily want to get too much into, but I know that there's a bit of gatekeeping in terms of the Deaf interpreter having to rely on the ASL interpretation of the hearing interpreter from speech, whereas there's less subjectivity in terms of just rendered spoken English to written English and so there would be sort of like fewer layers of there, there'd be fewer layers of subjectivity for the Deaf interpreter to have to deal with if they were just getting the captioning from spoken English to written English before producing their ASL interpretation to the client, so.

Kelsie Acton:

Yeah, I mean, I'll feed this to you because I can't think of a good way to ask that. But this is super interesting because I've never thought about it, but I think I've also often seen Deaf folks I work with who are quite fluent in both

ASL and English, who like, maybe things are tense, and they wanna make sure that they're being very, very clear.

Mirabai Knight:
Right, exactly.

Kelsie Acton:
So they'll use the captioning to check what the ASL interpreters are doing, or like just to feed in an extra layer of information.

Mirabai Knight:
Mhmm! No, absolutely, absolutely. It can be, you know. There's just, there's, there are fewer judgment calls in my line of work. You know, there's not as much room for misunderstanding, I would say I mean, and there's advantages and disadvantages to that. I've also had people who are completely fluent in both written English, and ASL, who in some situations will only want an interpreter because it, for example, the facial expressions of the interpreter are really important to help them understand the vocal tone of whoever they're communicating with. But in other situations, they will want the captioner, because the verbatim words spoken are actually the more relevant thing that they're drawing information from in that context. And so it will really depend. I mean, I think sometimes we want both, right.? But the subjectivity and objectivity divide of ASL versus captioning can be really complicated. And there's also cued speech. No one ever talks about cued speech. But that's another thing.

Interlude on Cued-Speech and Deaf Culture

Kelsie Acton:
Wait, what is cued speech? Because I don't actually know what this is?

Mirabai Knight: Cued speech?

Kelsie Acton:
I forget what they call it here. This is the thing where they like, you like, summarize what somebody said...?,

Mirabai Knight:

[Furrowed brow, head shake] No.

Kelsie Acton:

Okay, we should have a different discussion about that at some point.

[both laugh]

Mirabai Knight:

No, yeah, cued— this is another different discussion. Cued speech is more like captioning in the sense that it's just taking the phonemic information of spoken English and translating it to a visible representation of those phonemes.

Kelsie Acton:

Ohhhh, okay.

Mirabai Knight:

So it's, but it's not done, it's not putting them into written English that people can read. It's like actually taking them and making it so that everything someone says is visible on the hands and mouth. I took a workshop on it. So there's some people who prefer cued speech because they can get official expressions, and they can get the exact phenomenon equivalences of English.

Kelsie Acton:

Okay.

Mirabai Knight:

It's a very small subset, probably a bit of a digression. But anyway.

Kelsie Acton:

Yeah. Yeah yeah...sorry.

[Both laugh]

Kelsie Acton:

I'm thinking about the British equivalent of that and I'm like stopping myself, because that's not what this interview is about.

Mirabai Knight:

Well, the British equivalent of cued speech is cued speech with a British accent. Cued speech can be done with every – It's cued language – can be done with any language it's just phonemic representation. So there are British people who use cued speech, and they'll like cue things differently in a British accent compared to people who are cuing things with an American accent. But like total digression. If you want to talk into like Deaf and hard of hearing, like culture and politics, and the interchange of cultures and subcultures, and cultural Deafness and non-cultural deafness, and all, like it will take forever to get into all those things. But yeah.

Kelsie Acton:

And also like, I also want to recognize, I'm deeply unqualified as a hearing person, just like...

Mirabai Knight:

Yeah, I'll say also, I would say not the overwhelming majority, but the considerable majority of the people that I work for are mainly non-signing deaf, and/or hard of hearing people. I do occasionally work with signing Deaf people like, not rarely, but it's not the majority of the people I work with, so I would say that most of the time I'm not working in a culturally Deaf context. I'm working in a culturally hearing context with one or more people who have lost their hearing at some point, or perhaps grown up hard of hearing.

Final Thoughts

Kelsie Acton:

Yeah. Yeah. Gotcha. Okay, Is there anything I should have asked you that I haven't? Either about like remote access provision, or about the open steno project, or..

Mirabai Knight:

I don't know...I mean, I don't know what the rest of your project looks like...

Kelsie Acton:

I'm trying–

Mirabai Knight:

I'll say this: like I'm not sure, in terms of like the goal of creating opportunities for disabled people who maybe are not able to work on-site, but who could be working remotely by teaching themselves captioning and not having to go through the exploitative, for-profit, court reporting school system, I don't have any particular case studies that I could give you. I know one self-taught captioner who basically came to the field via Plover, and who is very open about having ADHD, but is also like a ridiculously brilliant autodidact, who basically has been able to do whatever they set their hand to. So I don't know if I can take too much credit for that.

But, I don't know like a lot of – people have not come up to me to be like, “I have a career now because of you that I wouldn't have been able to have, because now I can work from home now”. But, like theoretically, I'm hoping at some point it will, you know continue to expand and become a viable– I mean, I certainly am very grateful for all the chances that I've been able to work from home. Particularly during the pandemic when I had, I mean I'm the sole breadwinner for my household, and I had a young kid at home, so I was very, very grateful to be able to work remotely for that year and a half.

Kelsie Acton:

Yeah, yeah. Thank you so so much. It's such a pleasure to hear more about your work and–

Mirabai Knight:

Sure, yeah! And if you, if you think of any other questions, feel free to email me, or whatever.

Kelsie Acton:

Yeah. And same, if you think of something you're like, “200 years in the future. People should absolutely know this about stenography in 2023”
[laughs]

Mirabai Knight:

I just hope it still exists! I would just be so sad if this really useful, powerful technology went away, and no one learned it. So.

Kelsie Acton:

Yeah, thank you, again.

Mirabai Knight:
Absolutely.

Kelsie Acton:
Take care!