

Disability History Association Podcast

Interview with Coreen McGuire

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Caroline Lieffers: Hello and welcome to another episode of the Disability History Association Podcast. My name is Caroline Lieffers.

Kelsey Henry: And I'm Kelsey Henry.

Caroline: And we're excited today to be interviewing Coreen McGuire, who recently won the Disability History Association's 2020 Outstanding Article Award. Coreen, thank you for being here.

Kelsey: To start, can you tell us more about who you are and what you find the most interesting about working at this intersection of disability history, medical history, and science and technology studies?

Coreen McGuire: Yes, of course. Thanks, Caroline and Kelsey. It's great to be speaking with you both today and thank you very much for inviting me onto the podcast. So who am I? I'm Coreen McGuire and I've just been appointed as Lecturer in 20th century history at Durham University. I will be taking up that position on September 1st this year. And there I'll be working, as you guys have said, at the intersections between disability history, medical history, and science and technology studies. This kind of tripartite interdisciplinary approach is really reflective of the subject matter itself and the way that my research developed dynamically in response to the archival findings. And, so really this came from my PhD at the University of Leeds which was designed to answer how the British Post Office telephone system shaped the development of normative hearing standards. And this project combines social constructivism with disability history to reveal how crucial disabled users were to the formation of amplified telephony in 20th century Britain.

And to reveal this story about hearing loss, I looked at the pioneering works on, actually by a lot of members of the Disability History Association; people like Ian Hutchison and Jai (Jaipreet) Viridi and especially Mara Mills. To understand working at these intersections in particular, it's important to kind of remember that disability history, which we know is still a relatively new field, only really emerging in the mid-1980s, thanks to the work of disabled activists campaigning for greater rights for the disabled, and then of course within it Deaf history quickly emerged as a particularly strong subfield, which is partly due to the momentum provided by Gallaudet University Press, but in larger part due to the way that disability history engaged with the insights offered by the social model of disability, which conceptualizes disability primarily through the way that actors are disabled by their environment. And Deaf history fits really nicely with this model because many Deaf

people do not regard themselves as disabled and deafness is a paradigmatic example of disability that is caused by the way that hearing majority enforces speech as the dominant mode of communication. But I think the nature of the social model is tactically dichotomous to the medical model of disability. It's meant that disability historians have sometimes tended to maybe gloss the importance of technologies to the lives of disabled people in the past. And then we have scholars like Beth Linker and Julie Anderson pushing back against this, arguing that to fully understand the lives of past individuals, we need to explore all aspects of their lives, including the ways in which they engaged with medicine and prosthesis.

So you see hearing loss sort of disappears from the historical record because of the way that conventional historians might assume normalized function and the way that disability historians have prioritized capital 'D' Deaf history. So this meant that when I started investigating the Telephone Service for the Deaf, I really looked to the fields of science and technology studies for insights about the development of these kinds of tools. And STS studies really revealed how individuals appropriate, reclaim, and refuse technologies, which is a really pertinent thing for the analysis of hearing aids, broadly speaking. And then later on in my work I looked at theoretical insights from scholars like Ted Porter, Lorraine Daston, and Ian Hacking, which helped me to situate tools like the audiometer within the history and philosophy of measurement, which looks at the artificial privileging of particular values and single numbers. But then to understand how this focus on what they term "mechanical objectivity" impacted on the lives of people – how this impacted on the lives of people with hearing loss, I also looked at medical history, because here we have such great focus on the experience of marginalized groups within medicine, the recovery of patient voices, and the role of lay epistemology. And I think the links between all of these fields really play out around the gap between objective and subjective measurement, which is something that I brought to my postdoctoral role with the Life of Breath Project. And I will stop there.

Caroline: We'll have many follow-up questions about various pieces of what you said over the course of the interview, so I'm so excited. It's just wonderful to have you here and also congratulations, by the way, on winning the Disability History Association's Award for your article. It was published in *History and Technology*, and it was titled, "The Categorization of Hearing Loss in Interwar Telephony." It was thought-provoking, it was beautifully researched, and it gives us this kind of techno-social history of disability among many other things.

I want to ask you a little bit more about what got you interested in the history of the telephone in particular. You pre-figured this a little bit, I'd love to dig into this more, and I'm also curious about what your research process was like, especially since you just mentioned this kind of dynamic development in response to archival findings, and so, tell us more.

Coreen: Okay, so I came to this topic after doing my undergraduate dissertation on the implementation of oralism in nineteenth century schools for the deaf in Scotland. So, as you well know, oralism was an educational method that prioritized speech and lip reading to normalize quote "deaf" children and force their integration

into the hearing world. And as I said, much of deaf history has been concerned with doing the really important work of historicizing and explaining this historical injustice. But, and maybe this was because I was working a lot on the Edinburgh archives, I felt that there was less secondary literature on how technological intervention, and in particular the invention of the telephone, favored speech as a marker of deaf cure. And really the telephone, as scholars have pointed out, it's been linked to deafness right from the start, from its 1876 conception, the result of Alexander Graham Bell's desire to teach the deaf to speak. And then the telephone soon evolved into a hearing testing device in the form of the early induction style audiometer, which literally commodified the telephone into a device to test hearing and measure hearing loss. But what I argued in the PhD was that the telephone was itself also an arbitrator of normal hearing. I think it's a great example of the way that technologies can shape our experiences of being in the world and the way that we think about ourselves. Central to this point is identity and identity construction, and how technology impacts on identity. So my PhD was unusual because I considered adults with hearing loss as a separate group, with a separate culture and history, which is not usually the case. And I've been thinking a little more recently about why maybe they should be, especially because of the pandemic in which we realize that there's many people who can normally manage their hearing loss successfully in the workplace, have been frustrated by the inaccessibility of video calls and online learning without subtitles, and necessitating the use of headphones that can be incompatible with hearing aids and frustrate the ability to lip read. So I think the conversation about how we manage hearing loss is long overdue.

And, yeah, in terms of my research process, just to come back to that, I always come back to Douglas Baynton's point about disability being everywhere in history, but the question of course is then how do we find it. I think disability history is really interesting in terms of historiography because of course it partly involves looking at new primary sources and diverse primary sources, which I did by combining material from the BT archives, which were previously underused, and also looking at the Thackray Medical Museum's collection of hearing aids. But disability history also means just reexamining and reanalyzing existing historical material that's always been there to try and reveal the traces of disability history that were there all along. So you also have this kind of element of reading against the grain approaches, also common in things like women's history and black history.

Caroline: You just sort of touched on how Alexander Graham Bell's invention of the telephone was actually related to his efforts to get deaf people to learn to speak, and I think that's something our audience would love to know a little bit more about, so would you mind just kind of filling us in a little bit more on the background there, if you don't mind.

Coreen: Yeah, Alexander Graham Bell is such an interesting person. Especially growing up in Scotland and constantly being told that he is one of our great inventors and heroes. And then you look at Deaf history and you think, my god [laughs]. This is not a good guy. And of course a lot of people now know about his

influence on eugenics and his positive eugenics. He didn't want deaf people to marry. But of course, he married one of his students, Mabel, who was deaf. His mother was deaf, a lot of his early work and early experiments with hearing equipment and audiometry-type tools were to do with his mother. But then his father and his grandfather are also really important because they're both elocutionists. So his father, I think, was Alexander Melville Bell. And if you've ever seen the film *My Fair Lady*, Henry Higgins is partly, possibly, based on him and also another guy named Daniel who was a professor at UCL [University College of London]. But they were really involved with all these early sound technologies like tuning forks and nanometer flames, and just trying to visualize speech to make, to record the markers of sound in a lasting way. Which was obviously so difficult and so frustrating and they were just obsessed with this. And they invented – so there is a thing called Bell's Visible Speech, which is kind of the shorthand basically, one of the precursors to shorthand. So Bell is really immersed in this sort of life long obsession to make sound visible, to make speech visible, and to eradicate deafness in this very forceful way.

I think Oliver Sacks talks about this in a footnote in his book *Seeing Voices*, and he has a lovely phrase comparing Alexander Graham Bell to people like Laurent Clerc and placing Bell on the side of – he says something like he has a Prometheus-like fury in the way that he approaches deafness, trying to control it and eradicate it and really bring the tools of science to it. And, of course, Bell eventually made a huge fortune out of the telephone. It's, I think, the most lucrative patent ever patented. And there is a whole story about whether or not he patented it first which I can also point you to work on. But whether he did or not, he got the money, and he had enormous power, enormous prestige, enormous fortune, and so he threw his entire weight behind the congress in Milan that was designed to decide whether or not oralism should be enforced. So a lot of people point to him as being the person who was really behind that. And like I said, when I worked in the Donaldson's School archives in Edinburgh, he came there all the time. And I mean his passion, his life's work was really not about the telephone, it was about deafness – trying to control it and eradicate it.

Caroline: Thank you so much for that, Coreen. You mentioned BT, which is British Telecom, but at the time you're writing about, the British Post Office is responsible for the nationalized telephone service and their "Artificial Ear," which is an invention you talk about, also plays a big part in your story. So can you start by just explaining, perhaps for those of us who are not on your side of the pond, why the post office was involved in telephones in the first place. And then perhaps as a follow-up, can you tell us more about this technology called the Artificial Ear?

Coreen: Thank you, yes, when you put it like that, I can see that it was very strange that the post office was in charge of the telephone. This really links from the fact that the post office was a nationalized system, and they had control of all communications, this was part of the Telegraph Act of 1869. And in 1880, I think, there was a review of this act that categorized telephony as a communication, which should therefore be under the purview of the post office. So that meant that the private company, which was a Bell and Edison conglomerate, was basically

disbanded. They were told, "No, you can't do this. You have to be nationalized. The state is taking your company. We're doing the telephones now." The British Post Office then took over the precursor to them, the NTC [National Telephone Company]. So then, basically 1911 the telephone system became nationalized and it remained so between 1912 and 1981. So the British Post Office had total control over this nationalized telephone system. And they also became really involved with the war. So the post office became the main supplier for the army's telephones during the First World War, and this is really the first war where telephones play a really important role. Nobody had really expected that, but as the warfare came to a stalemate and the trenches were dug in, suddenly telephony became invaluable with communicating with the soldiers to the base and so on. And so the post office put all of their money into the war equipment. And then, of course, after the First World War there is a huge number of newly deafened soldiers, which prompts this ideological shift concerning attitudes to hearing loss, so you get this concept of the "deafened" as a new term used to categorize adults with hearing loss. And so during the interwar years, the boundaries between deafness and hearing loss are really blurred and the definitions depended on the cause and the context of hearing loss. And this idea of the deafened stemmed not only from medical innovations, but from the British Post Office's tests to determine the effectiveness of their telephone service, particularly their development of an Artificial Ear, which was a testing device used to assess the sound quality of the telephone by replicating the workings and the values of a normal human ear. And it was used to test hearing aids during this period and it was eventually used in the design of the first NHS [National Health Service] hearing aid. But the critical thing to know about the Artificial Ear is that its representation of "normal" was really the ideal. So its values were designed from the measures of quote "eight normal men with good hearing," to the detriment of those on the outer edges of a more representative average curve. So it was designed, really, as a way of efficiently and objectively measuring and reproducing sound quality without human involvement. Which meant the post office could manage the variability of hearing and standardize the norms of human hearing. But designating these standards in such a narrow, mechanistic fashion, resulting in an increased disconnect between the objective measurement of hearing and the subjective correlate.

Kelsey: That's fascinating. Pivoting a little bit, but still on the conversation of artificial ear technology, on your website you say that your work is broadly concerned with the quote "role of measurement and standardization in creating categories of disability." So we were wondering, how did the Artificial Ear as a standardizing technology actually generate novel categories of disability in the story that you're telling? And what did standardization make intelligible through the Artificial Ear, and also what did the Artificial Ear and standardization tend to conceal?

Coreen: Okay, so this is a good question, but it's quite a hard question. Basically, as I was saying, the Artificial Ear used data sets that excluded those with imperfect hearing. So this meant that the average threshold, which represented normalcy, was distorted, the line of normalcy was abnormally high. So the expanse of those categorized as deaf was too broad. And this distorted normalcy standard remains

embedded in the Artificial Ear, at least between 1928 and 1947. And a lot of people have said to me, this seems really strange, but what we have to remember is that the post office wasn't a medical institution at all. There was no need for it to search for increasingly accurate data. They were motivated by economic efficiency alone. So, what they wanted was an efficient and successful standard, and after all a successful standard is marked out by its invisibility. That's what makes a standard. So if we look, for instance, at Rachel Weber's work, she pointed out in 1997, which is pretty late, that the only anthropometric data for civilian female populations was from 1940, but was still being used in commercial plane cockpit design. And this of course links in with the work of Lundy Braun, who's shown that the spirometric data used for race specific population standards endured far, far longer than you might imagine. So she talks about the data gathered by Samuel Cartwright, a Southern physician and slave owner, being used in a study by Benjamin Gould that is still cited today by pulmonary researchers. And of course, Kelsey, I think this is something that is going to be really important to your work. And what Braun points out is that designing new data sets that are sufficiently large to be credible is a huge drain on time and finances, and for institutions like the post office, the standard of normal hearing wasn't ever meant to be medically credible. It was simply a useful economic tool. So why would they spend the time and money on more representative data?

There's that aspect of it. Then at the same time, the aspiration for standardization is obviously a built in component of telephone networks more generally. Its pursuit is partially driven by technological necessity. I mean, telephony is used by a lot of historians of technology as an example of how a device can create a network effect, because the desirability of the telephone directly correlates to the number of subscribers to the same system.

Kelsey: Right

Coreen: So, I don't know if I am explaining this very well but I think an example today would be like the iPhone/Android debate. And if you have an iPhone, you don't want to get a green text, or I guess you don't want to send a green text [laughs]. So you get, yeah, this, you end up benefitting if you buy into the system or the network. So standardization makes the telephone system intelligible, but of course, as you point out, it conceals the values that it's being built upon. So this is really the crucial point because standards of normalcy are developed through instruments with artificially privileged values, and then bias is deeply embedded in how bodies, especially disabled bodies, are measured and defined. And I kind of borrow slightly from Caroline Criado Perez's work here to define this as a "disability data gap." And what I mean is, by this term is that the selection of people that we choose to measure as standard is subject to discrimination and bias because we prioritize the measurement of easily recognizable groups. And this leads to biased data sets that conflict with individual experiences of health and especially so in the case of invisible but experiential disability. And we see real-world consequences of this in cases of invisible disability that are contested, for example in compensation procedures. So problems really coalesce around felt experiences that don't align themselves to standardization. And breathing is a really great example of this. It is

a singularly difficult process to standardize and regulate. And I think at the moment, more than ever, we're really aware of how difficult it is to confidently differentiate pathological breathlessness from anxiety induced breathlessness. And of course we're seeing lots of reports circulating at the moment about COVID pneumonia patients that have deathly low oxygen saturation stats but don't have any apparent respiratory distress. So I think we're really seeing how much things like breathlessness are uniquely challenging to capture and measure – and I can talk about this a little more later, but that's just an example of how standardization can conflict with individuals, and individuals' experience.

Kelsey: Definitely. That's so, that's such helpful context. And I think your work is really, really important for allowing us to see the ways that standardization results in particular kinds of black boxing, like a concealment of the biases that go into the production of particular technologies. And you said that the Artificial Ear technology wasn't initially made with medicine in mind, but that technology traveled into medical spaces, and the conditions of the production of the Artificial Ear and kind of the limited, the limited sample of who was actually considered is then concealed as a metric begins to travel as a standard. So those limitations are continually black boxed and streamlined away in ways that are harmful, as you're laying out.

Caroline: A really important technology in this article is the amplified telephone, so can you start by just explaining to our audience, what is an amplified telephone?

Coreen: Yeah, sure, that's a good question. I find it quite hard to explain without the visual pictures, but maybe you can add that in. Although, like I said, there is not really increasingly anything to differentiate it from a normal telephone. So you have the telephone, and I would say pretty much as soon as the post office starts selling the telephones and making them available, as soon as they become very important for doing business, a lot of people have problems hearing them and so, petition the post office to make them more audible. And of course, a lot of them are able to do this themselves. I mean, we don't have transistors at this period, so it's just basic valve technology used to amplify the signal, but people aren't allowed to put any attachments on the telephone that hearing aid companies could provide or that they could provide themselves because they are state controlled, and they're state apparatus, and to do so would be illegal and the post office would come to your house and make you take it off. So they can't amplify the signal or use their own private devices on them. So the post office has to provide something. And because they are a kind of arm of the state, there is this idea that it is their responsibility to do so.

So the first amplified telephone they design is directly in response to users called the Smith Brothers who are losing business because they can't hear the orders properly on the phone. They're an oil and gas company. And so the post office engineers design something that has basically got like maybe one valve in it, or a couple of valves, that'll amplify the signal. And they kind of just provide this to those customers, they don't really advertise it or make it more widely available. But they start providing them to people who complain at a slightly increased rate.

And then as it becomes a little bit more of a kind of thing, they do start to advertise them. And, I mean, this is kind of complicated, because the post office doesn't advertise. It's seen as very kind of déclassé, this is not something that a government should be involved in. They have this, you know, special position of trust to the community and they shouldn't be doing anything as crass as advertising. So this all kind of changes in the, I think, the late 1920s or early 1930s where they get one of the first PR men ever, this guy called Stephen Tallents, and he develops all sorts of fantastic advertising campaigns for them. And then they start advertising it as the Telephone Service for the Deaf, or the Telephone for Deaf Subscribers. The BT still call their customers subscribers actually, which is kind of cool. So at this point they have these great adverts for them and they just have a little knob on the top that allows people to adjust the volume, but of course, for lots of people with hearing loss, it's not the volume so much as it is the tone and the frequency. So then they release a new one that has tone control as well as volume control, and this is helpful. But it's still very difficult for a lot of people, especially when they develop the integrated handsets, this is like a telephone that is like this [gestures hand symbol for telephone], the symbol you see for telephone, where it is just one handset and you have the ear there and you speak into the mouth. But before that most people had candlestick telephones, so you had the mouthpiece separate from the ear piece. And so this meant that people that had bone conductive loss, they didn't need to press it to their ear, they could press it to their mastoid bone and talk freely, and this was perfectly usable and fine for them. And as soon as they get rid of them, the post office don't realize that hundreds of people are using the telephone in ways they hadn't realized or anticipated. So they get loads of more complaints and they have to develop a new amplified telephone which has slightly better functions, but of course it's not available in all areas. It's very difficult to standardize this kind of tech. And they get complaints from user called Harris, I think who I talk about in the article, who had his own device that he refused to take off. And basically the post office go and look at his device and realize that it's much better than anything they've got, and they basically steal it, and put it into their final version, which is the one that is in use until the instigation of the NHS and the first NHS hearing aid.

Kelsey: So I was really interested in hearing more about what you call the "interpretive flexibility" of the amplified telephone in your article, and the way that it simultaneously could function as a medical and technical object. Can you say more about this aspect of your story, opening up avenues for telling histories of hearing loss that are not strictly medical histories?

Coreen: Yes, so interpretive flexibility is a pretty key concept within history of technology and it stems from the social construction of technology, or SCOT, approach, which was pioneered by scholars like Bijker and Pinch, who discussed different ways that tools like the bicycle were interpreted by manufacturers and different user groups. And the amplified telephone, and hearing aids as well to a certain extent, as I've mentioned before, were really in the stage of interpretive flexibility during the interwar years, because there was constant disputes over who was responsible for the design of tools for hearing loss. Was it medical doctors? Was it engineers? Was it telephone engineers? Was it the users themselves? And I

think this really comes out at the instigation of the NHS because when the NHS hearing aid was designed, it was designed by the post office, because they were the de facto experts in all hearing aid technology. So naturally, they decide to design a device to link it with their telephones. They see the telephone as an extension to the health service and access to telephony as part of an overall healthy lifestyle. And so this is also how the Telephone for the Deaf Users fell, or as they term them, the Deaf Subscribers, they basically stopped paying for their amplified telephones when the NHS comes in because they see this as naturally falling under its remit. This is not how the Ministry of Health saw it at all. [Laughs]

Kelsey: [Laughs] Say more.

Coreen: So they, they refuse to pay for a linkup between the National Health Service hearing aids and the post office telephones. So the categorization of the amplified telephone device was flexible and it was subject to different party interests, especially when somebody was going to have to pay for it. And the Ministry of Health, I mean they try to not even take responsibility for wheelchairs at this time, which is a different story, but they are a bit, yeah – they feel the adaptive design for hearing loss should have been handled by medical experts in hearing loss, but they're not really there, it's just the post office. And the amplified telephone was designed, as I said, in response, dynamically, to user demand, by the post office engineers as an engineering device. But what happens when they try to design this fitment to connect the telephone to the hearing aid is that they stop listening to users. They, they initially consider engaging with users as part of the design process, but basically they say, "oh, it's going to be too variable. People's individual hearing loss is too diverse and different and we can't standardize it. Let's just make it a problem for engineers." So what they do is they design this device that is kind of meant to go in the pocket, and they've got a great photo of a post office user guy using it and he's on the phone and he's got this acoustic coupler. But basically when they start, you know, they design it, they spend all this money, and they send it out to people that belong to the, I think the National Institute for the Deaf, and it turns out that obviously most users of hearing aids at this time, especially women, conceal the hearing aids about their person, especially by strapping them to their suspenders. So this design means that every time they want to use the telephone, they need to take all their clothes off [laughs]. It makes no sense.

Kelsey: [Laughs] Oh my gosh.

Coreen: And I guess, like, try to get their leg up? I don't know. But basically they designed something that was absolutely perfect for an engineer working in the post office and nobody else [laughs]. The only person that responds positively is the Post Master in Yorkshire who says, this is going to work for me, but it's not going to work for anybody else, and especially for women who, he actually, he has a lovely quote that says, "Now, how a woman would manipulate the phone and where she would fit her aid is up to her. But she could hardly be expected to partly undress and women aren't that keen to disclose the aid outside. But to me, a man, I don't mind in the least, as it's results I'm concerned about. I must hear at all costs,

regardless of the sight of plastic bands.” So basically the adaptor perfectly suited the needs of its designers, not the needs of the users. And it kind of ends up being this case of intersectionality in which hearing loss and female identity intersect, meaning that there is an inability to assess assistive technology, particularly harmful to women with hearing loss, who were kind of subjected to this more powerful social requirement to conceal it. And you know, the device just doesn’t work for women wearing dresses in the way that it would for a man wearing a suit with a breast pocket.

Caroline: That’s really interesting. Would you mind expanding just a bit on the issues of stigma and passing that emerge in the history of this technology as well?

Coreen: Yes, so I’ve written about hearing loss in relation to stigma and passing a little bit more broadly in an article in the *Oxford Handbook of Philosophy and Disability*. But focusing on the amplified telephone in itself is especially interesting because it does enable those using it to pass as hearing over the telephone, during a time period in which the stigmatization of hearing loss was high. So it kind of solves issues of audibility and stigmatization but it’s not apparent to the caller at the other end of the line. So it is apparent to the person using it, but not to the person listening to their voice at the other end. So it becomes invisible as a prosthetic, which is especially salient to hearing loss, which is obviously itself an invisible disability that is only revealed by the use of relevant assistive technology. Which obviously the user can choose to reject or not, if they wished to pass, and there’s good reasons why somebody might wish to do so, especially in the early twentieth century. And we can kind of look at the ways in which hearing loss was stigmatized to, especially to certain populations, by looking at sources like advertisements, which we need to keep in mind are intrinsically biased sources, using exaggerated claims, which did court controversy and condemnation from the government and the medical community. But one of the ways that hearing aid manufacturers got out of this was by arguing that hearing aids were technological devices and not medicines, so they are not subjected to the same restrictions and legislations. So hearing aid technology in this period, it is not clear who is responsible for hearing loss at this time.

Caroline: You’ve talked a little bit about the users of the amplified telephone, but I wonder if you can expand on it some more. Give us a few more examples, perhaps even some things that didn't make it into this article.

Coreen: As I’ve kind of hinted at, the amplified telephone was almost entirely user driven. There wouldn’t have been an amplified telephone without people with hearing loss working as activists or working as designers, working as engineers. And really lending their own expertise and their own embodied knowledge really, about the best way for them to access telephonized sound to the post office engineers. So, yeah, I mean one of the ones I didn’t get to talk about in the article is one that I have put in the book, but I wish now that I’d done it in a slightly different way because it’s this wonderful guy who sends them loads and loads of drawings in a lovely blue pen of – and it kind of looks like Simpsons characters – showing himself and the way that he wants to be able to use the phone. And his

issue is again the placement of the receiver, it doesn't sit the way that he uses his hearing aid, and he wants them to change the shape of it so that it's not cupped. And he argues with them because he kind of knows that they are not going to do this just for him. But what he says is that it will reduce the spread of germs through the telephone, and it's something that I kind of just glanced at in the archives when I first saw it, but now I wish I had looked at that a bit more and thought about the impact of the Spanish influenza, and how much that actually would have been something they were thinking about all the time. The way that germs would have sat on shared technology like telephones. So that is something that I regret missing out of in both the article and the book, or at least not interpreting it in that way. But I guess that's what history is about. You interpret it based on your own kind of ideas at the time.

Caroline: There is a large literature on the intersection between deafness and the history of sound technologies, and I know that users quite often feature in kind of central roles as inventors and whatnot. So tell me a bit more about that.

Coreen: A lot of these works, what they do is they show how crucial hearing loss and people with hearing loss have been to the development of sound technologies. I mean, we wouldn't have almost any of the sound technologies we rely on today if it hadn't been for disabled users, although they might not have identified as such, but certainly people with hearing loss. I mean, Alexander Graham Bell is actually kind of an exception in that he didn't have hearing loss himself, but like, Oliver Heaviside who developed long distance telephony and worked on increasing the signals that we use in telephony, did have hearing loss. Edison, of course, had hearing loss. There's lots of examples of this. And also, just like lots of individuals that we maybe don't talk about specifically but did lots of tiny, little interventions in their own home. I think this kind of homemade design is really crucial in disability history, because it's so common. People design things that they know will work for them and their particular needs. And sometimes these are difficult to standardize, sometimes they don't work for everyone. Especially in the case of breathlessness technologies. There's such individual variance and particular personal preference that, you need to make something that works for you, but it's not necessarily something that's going to work for someone else.

Caroline: Mhm. That's really interesting.

Kelsey: One thing that came up for me when I was reading your article and in your response, when you were talking about how the growth of telephony was at least partially prompted by the war, and the story that you're telling is at least partially influenced by the creation of this new deafened population of war veterans. And I'm curious about - because you said that there was kind of a bifurcation between those who considered themselves defined by the war, like older adults, and those who identified as Deaf, and I'm curious about like, particular forms of actions or activism on the part of veterans that you came across in your research and how it might have differed from other forms of deaf activism at the time.

Coreen: Essentially the people that were engaging with the amplified telephone wouldn't have considered themselves to be deaf. They would have considered themselves to be hearing. And people who considered themselves to be deaf certainly existed – there were dynamic and important groups of deaf adults and children who were activists and who have clubs. The Silent Worker, the Deaf Club. There's lots of sources where we can recover their views. And I think, initially, there is a book on Victorian deafness, and I can't remember the author – oh, Jennifer Esmail, and she talks a little bit about this and the way in which the telephone was initially seen as something that maybe could offer hope to the deaf. And maybe it was something they could use as a really efficient hearing aid. But when it comes out and it was so difficult to hear, I don't - it's hard to imagine, I think most of us would struggle to hear it to be honest. So, immediately, they kind of disengaged with it and it's not really something that the deaf community is particularly interested in as individuals. They are obviously subjected to it in the form of the audiometer as children, but that's kind of a different story. So, yeah, I think it's important. I think your question is kind of getting at this – the people who lost their hearing in the war are usually men. Sometimes very wealthy white men. Certainly these are the actors that I have engaged with most in my work, because they're people who had a powerful amount of resources and wanted to make sure that they had the help that they needed. And they would design it themselves if the post office wouldn't provide it for them. So this really changes things. Because previously the deaf were really a problem for social control and eugenics. But now all of a sudden it's, you know, England's favorite sons are coming home and can't hear. You know a lot of this ends up being driven through the House of Lords by deafened Lords, so it's interesting, I mean - Graeme Gooday and Karen Sayer, I've just been reading their book and what they did is define the people with hearing loss as adults and individuals who have an emotional experience of hearing loss as a loss, so they – I think this is a really interesting approach because it probably makes it quite valuable to the kind of history of emotions field, which isn't a way that I thought about it before. But basically the identity they we're interested in were people who experienced it as a loss, emotionally, and might pass as hearing in any other aspect of their life until their engagement with technology. I mean it's the first time that you have audio without accompanying visuals in history, like ever, this has never happened before. That you're trying to talk to someone where you can't get body language cues, you can't read the lips, you can't – the sound is completely divorced. So it's a huge problem for people for whom hearing might not have been a problem in any other context.

Caroline: You've alluded to this a bit already, but an important part of your story is the intersection between telephony and the sort of emerging priorities of the British welfare state. Can you tell us more about how this really shaped the history of telephony and Britain in ways that perhaps diverged from the US or other countries.

Coreen: Yes, so as I've said, the First World War generated this new need for telephones for people with hearing loss and this conflict accustomed a whole generation of soldiers to using telephony. There's a great book actually, I think one of George Orwell's books where he talks about using a trench telephone and getting

electrocuted by it and he never uses a telephone again. But that was quite unusual. For most of them this was how they became accustomed to using it and wanted to use it at home. Although it is still fairly exclusive at this point. It's still something that's more for business men. But a lot of these business men, a lot of these soldiers, had myriad hearing loss problems because of their wartime service. And this really raised the profile of deafness as a national concern, both during the war and after. So this meant that the treatment of deafness became a priority for the medical profession and also, as I said, it changed attitudes toward deafness as perceptions of treatment shifted and moved away from eugenics-based ideologies to rehabilitation movements, based around the theory that noise-induced deafness could affect anyone. And this wartime-induced deafness also meant that there's an acknowledgement of social responsibility, which means there's various charitable movements established for disabled veterans and also lots of official policies of state intervention reflected in the establishment of things like the Ministry of Pensions in 1916, the National Insurance Act, that's in 1911, and the Ministry of Health comes in 1919.

And then of course, there is a newly enfranchised public expectation that the government is responsible for citizen welfare and so, basically the post office had to have this increased consideration of veterans because they were an arm of the state, so it really developed - the amplified telephony really developed alongside the priorities of the proto-welfare state. And, as I've said, private hearing aid companies couldn't attach equipment to the post office telephones, so the post office was really challenged to create a telephone that could be used by people with less than perfect hearing, as well as people with perfect hearing. And one of the ironic things is that, as I said, the wartime really worked as a catalyst for the post office to spur on their development of specialized auditory equipment that could be used in the trenches. So one of the things they have to work on, of course, is amplification and then, you know, they end up with a huge amount of specialized amplification technology that can't really be used in their regular telephones, but they can appropriate them and try to recoup some of their losses by putting them into these amplified telephones. So, yeah, that is one of the ways that they tried to recoup their losses, that they've lost through working with the state during the First World War. And this was really the start of a really collaborative relationship between the state and the post office. And they actually, interestingly, refer to it often as "the special relationship," which is obviously not what we think of when we hear that now. But yeah, the technology using amplified telephones really developed very much in tandem with the technology used in trench telephones in the First World War. And then it is reapplied in a civilian context.

But, yeah, of course you don't have the nationalization of the telephone service in the US, but you kind of might as well have had, because American Telephone and Telegraph Company, AT&T, just - like I said, the telephone works best if everyone is using the same one. So, you know, it's actually described as a form of American socialism and their slogan was "One Policy, One System, Universal Service," so it really kind of was just AT&T.

And Mara Mills has done some fantastic work on AT&T and the way that they interacted with the telephone system and with hearing loss, and their kind of practical monopoly over the telephone system, which wasn't legislated but was, you know it worked in practice and they fought off any competition. And I don't know if Mara Mills actually talks about this in her work, but she certainly, she told me about this case called "Hush-a-Phone vs. the United States" which was ongoing, I think, between 1949 and 1968, and this was a device that was attached by the telephone user to the telephone to improve audibility, and of course it was considered by AT&T to be an illegal attachment infringing on their monopoly. And they went to court to ban it. And this is kind of like, it is a little bit like a physical coupler – whereas the couplers that I was talking about before were not using physical attachments. So the post office in the UK, they have a similar situation with private hearing aid companies using couplers to link hearing aids with their telephones, but they're not physical attachments, so they can't press charges. But basically the post office supplied amplified telephones for survivors with hearing loss throughout the interwar years. And this, AT&T didn't do this, although they did specialize in hearing loss in many, many ways that are really important, but they don't have such an inclusive approach. And they're really forced to provide things by activists in the 1960s and that story is in that book. And, of course, by that time AT&T are doing much better work than the post office, so it kind of switches around at that point.

Caroline: One of the issues, of course, that disability historians always have to make decisions about, sometimes struggle with, is the issue of terminology, and throughout this paper you use a variety of different terms, things like deaf with a lower case 'd,' Deaf with an upper case 'D,' limited hearing, deafened, hearing loss. So were you working largely with terms that your historical figures would have used, or was it more complicated than that? Just talk me through some of what you were thinking.

Coreen: So, I mean, this is a really complicated subject. And it's difficult, especially to talk about over an audio format because a lot of it is signaled by capitalization.

Caroline: Yeah

Coreen: And also, I mean, one of the problems for me that came up for me in the book is that I was using the word "disabled" in relation to hearing loss, although many Deaf people would not consider themselves disabled. But I didn't sort of fight the way that the group I was talking about identified themselves, and then at the same time I tried to avoid referring to people with disabilities to emphasize, in line with the social model of disability, that people are disabled as a result of the workings of society. And kind of the key insight of disability history, which is that disablement is contingent on temporality, on spaces, on cultures, and on context. And, you know, what I am really interested in is the way in which people have been disabled by technology and measurement systems. So, when I use the word disabled I am aware that it doesn't reflect the experiences of most people with hearing loss or the culturally Deaf in some cases. So it's so tricky, but in the context of this article I capitalized the word Deaf, first of all in order to indicate the way that the term is being used to represent the members and views of a group

identified by culture and community, rather than through their medical status. But what makes that a little bit more complicated is that the post office consistently referred to their "Deaf Subscribers" and their "Deaf Telephone Service" as proper nouns, so they consistently capitalize them. And I have to reproduce the primary sources verbatim. But obviously, in those instances the capitalization of "Deaf" indicates the historically accurate title, but it is not indicative at all of the cultural identity now attached to capital 'D' Deaf.

Kelsey: I wanted to pivot a little bit, and we don't have to leave the conversation about your article entirely behind, I'm curious about how it fits into your book projects. But we know that you have two major book projects in the works, and we'd love to hear more about them. The first, *Measuring Difference, Numbering Normal: Setting the Standards for Disability in the Interwar Period* comes out this month [August 2020] with Manchester University Press, and your second is a really exciting collaborative project with Dr. Jaipreet Viridi, a fellow historian of medicine, disability and hearing technologies, who's also a friend of the podcast. Caroline, I'm pretty sure we've had her on, right?

Caroline: Yeah, absolutely. And she's also on the Board of Directors of the Disability History Association.

Kelsey: Wonderful. But this collaborative project is called *Instruments of Precision: Phyllis M. Tookey Kerridge and the Science of Disability in Interwar Britain*, and it's under contract with John Hopkins. So we'd love to hear a little bit more about these projects.

Coreen: Thanks so much. That's really kind of you to give me that opportunity. And you're quite right: my first book, *Measuring Difference, Numbering Normal* comes out this August. And this book really brings together my research on hearing loss and breathlessness technologies in a comparative study. So it is kind of split into two different halves; it looks hearing in the first half, breathlessness in the other half. And then it is split into two chapters within those sections. First of all looking at the measurement and then looking at the way that assistive technologies were embraced or rejected by their users. And it basically, its kind of main thesis of the entire book is that the implementation of measurement technologies influenced our understanding of disability in twentieth century Britain. And it argues that these kinds of measurement choices were influenced by the relative difficulty or ease of their implementation. So health measurements were given artificial authority if they were particularly amenable to calculability and easy measurement. And I think the first example I talk about in the book is BMI, because I think people understand that that's something that is used because it is easy to standardize and compare and to calculate, but it's not necessarily in any way related to accurate, accuracy of the body.

And, so, I can talk a little bit more about the book, but I also do want to talk about the second book project which is on Dr. Phyllis Margaret Tookey Kerridge, who was a British chemist and physiologist whose scientific research transformed our perceptions of invisible disabilities. So those that were hidden from obvious view

and not apparent until they were medically framed. And she worked on hearing loss and respiratory disability, as well as on things like nutrition deficit. And, like you said, it's co-authored with historian Dr. Jaipreet Virdi, who I've worked with for a long time actually. We've written articles together – two articles together before. She is really a brilliant scholar and co-author, so I'm really excited for her first book to be released, which is called *Hearing Happiness*. And it's a really wonderful intervention and a wonderful read and hopefully our book will be, too.

Kelsey: I'm sure of it.

Coreen: I think really what we really tried to do was show that Phyllis Kerridge spent her career establishing quantitative studies on, especially, hearing acuity and she really advocated for more accurate, universal standards of hearing tests to prescribe hearing aids that were the best fit for the patient. And, you know, I spoke about the fact that the NHS hearing aid was considered to be automatically part of a health service, which might be surprising but this was because of her. It would have never been in that kind of situation if it hadn't been for her interwar work.

Kelsey: It sounds like maybe Phyllis, Phyllis Kerridge is a historical figure that's been with you for a while. You talk about her like you know her very well.

Coreen: [Laughs] Yeah, if we had the video on, I would show you I've got a little picture of her on my bookcase as my inspiration. She got so much done in her short life. I guess they didn't have TV back then and maybe I would get more done if there was less distractions. And I kind of, I came across her name when I was researching the post office and they worked with her on developing their hearing assistive equipment. She was, you know, one of the very few experts in the field. And I kind of noted her name and thought, God, that's unusual. You don't get so many experts in this field. And you certainly don't get very many lady doctors either [laughs]. So I kind of noted it down and I tried to Google her. There was nothing about her. And I kind of forgot about it until we were at that meeting, Caroline, you were there, too, in Leeds.

Caroline: I was.

Coreen: The "Patents...", "Rethinking Patents...", what was it called again?

Caroline: Something like that, yeah. With Claire Jones.

Coreen: Yes, with Claire Jones. And I met Jai there and she gave this incredible talk in which she started looking at someone called Phyllis Kerridge, so basically we kind of there and then swapped all of our notes, and made a note to follow up on something that really would have just been a footnote in both of our projects, but has instead turned into this massive study that, yeah, I am really excited about.

Kelsey: Wow. We're really excited about it, too. Thank you so much for giving us some insight into the book projects.

Caroline: You've been, of course, alluding to matters of breath, breathing, breathlessness, throughout our conversation. So I really want to hear more about a project in particular that you've been involved with called Life of Breath. It sounds really fascinating.

Coreen: Yeah, it's been such a great project to be a part of. Like I said, it's been split between Bristol and Durham, with the PI in Bristol, who is Havi Carel, and the PI in Durham was Jane Macnaughton. And it's really changed the way that I work completely. As I said, I've been working in an interdisciplinary fashion for a while. But when I started working on Life of Breath, that really meant that all of a sudden I was working not just between disciplines in the humanities, but between faculties. So working with medics, working with respiratory physicians, working with yoga people and palliative care experts, and of course, philosophers. So, it's really, really changed the way that I think about history. Partly because it's meant that I've really had to make sure that I am not using history specific jargon when I'm presenting. And partly because when I've talked about my work, one of the things that, especially medics tend to come back with is, "Well, what are you going to do about this this? How are you going to use this research to change things?" And when I first started working on the project I kind of said, "Well that's not what historians do. That's not what my goal is. And that's not really appropriate." But through working with this project, I've kind of decided that no, actually, I think if, especially if you are working on disability history, you maybe do have a little bit of an imperative to try and intervene in policy and to try and guide not just the past but the future. So it's really been a fantastic experience and, obviously, the whole project is designed to look at the breath and breathing and breathlessness from the perspective of the humanities. To kind of ask if there's something that the humanities can add to the way that we think about breathing in a medical paradigm. And, as I've said, what I really got interested in was the use of spirometry following Lundy Braun's work. Which of course, Kelsey, you must know about.

Kelsey: Yeah, and you're welcome to expand on working with Lundy, I know she's been really important to the way that you are thinking about breathlessness.

Coreen: Yeah, absolutely. I basically, I read her book and was like, "This is the best book ever. I want to do this in Britain" [Laughs]

Caroline and Kelsey: [Laughs]

Coreen: But looking at disability rather than looking at race. I think I had this idea that class was going to be more important for Britain, than race. But I think this is something that a lot of historians actually contest and that this is something that has sort of been imposed on, particularly the history of eugenics, by people trying to distance themselves from it in Britain. There is a great book about this called *Breeding Superman*. Anyway I didn't end up going so much into class rather than race, because you really had to look at all these different reference class standards, which is something that becomes really important in my book. So basically you can't measure for normalcy without looking at "normal" for the class that a person,

that the individual belongs to. So normal for your sex or your age or your race or your height or your weight, or your, you know, in the period that I am looking at, occupation and class is much more important than we would necessarily think of now. I mean, it's different. These things always change all the time depending on the condition.

So like hearing loss, you don't really correct for anything. And this is something that Phyllis Kerridge was really advocating for. She thought that they should be correcting for things, especially like age. Whereas breathing has always been something that we've seen as based on group. It's never been something for all, it's been something that's been, in spirometry, it's been something that's been used to enhance the differences between us. And, yeah, like I said, it's not worked very well. It's such a difficult process to standardize and to regulate. And, like I said, it's something where – it's, you know, that's come up for everyone recently. You know, I think we are much more aware of our own breathing than we have been before. And, you know, being in the Life of Breath, we've worked a lot with neuroimaging studies that have shown things that, you know the humanities have shown before, basically, but we believe it more when we can see it in an MRI. But basically an individual's past experiences, and their expectations, and their personal psychology all determines the way that they experience breathlessness. And both the mind and body process breathlessness and its severity doesn't correlate with disease stage. I mean you can have two people with exactly the same physiological stats, and one person is bedridden and one person is, you know, riding their bike and going up mountains. And we just don't really know how or why that is. And, you know the body-mind sciences work concurrently together, so this is very similar to hearing. We just don't know a lot about how it works. And these kinds of multidimensional, sensorial processes really need multidisciplinary research to fully understand them.

Kelsey: So I'm really curious about if you had any conversations with your Life of Breath colleagues about the Black Lives Matter rallying cry, "I can't breathe." And I understand that we're working within different national contexts, but BLM, like it is a transnational movement, and I know that there's a BLM UK. But I'm unsure about how much that slogan, that was obviously derived from Eric Garner's own words when he was murdered in 2014, how far they've traveled or if this might have come up in conversations that you've had with the Life of Breath. But it sounds like something that is definitely within the wheelhouse of the kind of multidimensional interdisciplinary research on breathlessness that you are describing. So, yeah, I'm just curious about if this slogan has come up for you all.

Coreen: Oh, yes, absolutely. We did an exhibition called "Catch Your Breath" and that initially was in Durham and then came to London and Bristol. And we had the, a lot of the posters from the Black Lives Matter movement on display as part of that, because it was seen as incredibly important to what we are doing. And one of our postdocs, Arthur Rose, has published a little more about this. He works on literature and I think he looks more at the ways that the breath has been conceptualized across different races – and particularly the politics of breath – so he has done really great work on that. For me, what - the way that I've looked into this has been really through look at how our lungs and the way that we breathe are

affected by the way that we live and how we work. And looking at the kinds of intersections and interrelations between race and poverty and health inequities. Which is just absolutely central to this work.

Kelsey: Oh my gosh, I - this sounds like the most incredible project and I am really curious, I mean you mentioned that the colleagues, everyone that you've been working with, with the Life of Breath Project has felt kind of newly called upon, like, in the time of COVID and heightened incidences of police brutality, where these intersubjective experiences and racialized experiences of breathlessness are coming up more often. You're perhaps feeling more newly charged or plugged into our current moment and are probably being asked to speak on behalf of the present as a historian. And I'm wondering what that experience has been like for you, in terms of thinking about making usable pasts.

Coreen: [Laughs] It's so strange, it really is. Because, and I'm sure you feel like this, too, as historians of medicine and disability in this moment. There are so many headlines where you think, Oh my god, this is amazing. This is so interesting in relation to this that I'm working on and this theory, and think, wait, this is real. Happening now, to real people. And there is this moment of kind of horror almost. So it's very difficult to keep a theoretical distance from history when you're living it, I guess. And I think both Jane and Havi have written a little bit about their responses to both the pandemic and then the kind of, I think they put it, the cries of those breathless from COVID-19 and then the cries of "I can't breathe" and the protesters of the Black Lives Matter movement. And kind of trying to, you know, draw the links between the literal chokeholds and oppressions of inequality of opportunity and then the kind of metaphorical uses of breath as essential to life and a metaphor for freedom. So it's, perhaps this is such a critical issue right now, both in terms of medicine and in terms of politics. And I can link you to their work on that.

For me what's been particularly frustrating is the shortages of ventilators necessary, and the way that has been handled by the UK government. Because what they basically did back in March was call for industry to produce and supply the new ventilators - amidst widespread frustration at their failure to take advantage of the EU procurement scheme, which was meant to bulk buy ventilators. But instead they worked with this dedicated consortium of British manufacturing companies that were meant to produce the necessary stock. And so people like Dyson or Mercedes and kind of, you know, well known British engineering firms. But the simplified design remit for these ventilators meant that they were completely unsuitable for use with COVID-19 patients, because they were all this basic standardized design. And I could have told them that! This is exactly the same situation that we had in the interwar period about who should be responsible providing and perfecting these technologies. You know one of the things that came up -- and a lot of the debates around this time were kind of moderated by the medical research council. And the key debate was really about which breathing machines were best, those using negative pressure or those using positive pressure. And negative pressure machines are kind of like the ones that you are more familiar with probably, like the iron lung style machines or Both

respirators. And they are kind of coming from medicine. But at the same time you have devices like the Bragg-Paul Pulsator which was designed by William Bragg, an engineer, for his neighbor, very much in communication and collaboration with him and his wife. And its priorities were for concealability, portability, you know, noise – you know, the noise was quiet – it was something he could apparently even use while driving. And of course Phyllis Kerridge was the person who made this usable for a wider variety of users in hospital settings as well as in the home.

Basically, you know, when Lord Nuffield, he manufactured cars, he eventually, like, donated loads of iron lungs, they became the standard model and people came to the hospital to use them. So you kind of see the disappearance of these positive pressure devices, like the Bragg-Paul, which were, you know, in some ways were hugely advantageous to their users, because it allowed them to live at home. It was something that enabled them to live life, rather than something that was just designed to sustain life. But, you know, physiologists thought that they didn't imitate natural breathing so well, and would have led to, you know, circulatory problems and heart problems. Which was probably true. But then what you really see when you look at the people who are using them and look at different stories is that people just have different preferences. It really depended - what they preferred, what felt better to them. So it's, it's just, breathing is so individual and personal, and it's so difficult to standardize. You really need to have variability and options built into anything that you design.

Kelsey: Right, and it sounds like ample opportunity for user feedback.

Coreen: Exactly. Yeah. I mean, you can't design these things without asking users. Although, you know, I mean, they did, but yeah. [Laughs].

Caroline: Yeah, not to mention the issue of the priorities of who would get ventilator in the case of shortages. I know that's been a major issue for many disability communities, is that they're worried that people will be evaluated on their age and disability status and health status and quality of life estimates, and these things that are, many find sort of wholly inappropriate to determining the value of their life.

Coreen: It's so dreadful. And it's so bad because we have the knowledge and we have the theory. Disability scholars have been working on this for such a long time. And we know in particular that medical professionals tend to be the worst people to evaluate and assess disability quality of life. And, I mean, you have work, particularly from the perspective of the philosophy of disability, looking at things like the "disability paradox" which shows that most disabled people have a higher than average quality of life, even those that, you know, external viewers would look at them and say that their life is not worth living to them. This is something that tends to increase if the person doing this assessment is a medical professional or involved in medicine, and tends to decrease if the person doing the assessment has spent time with disabled people at all. So this disability paradox really shows that it is completely inappropriate to try and assess disabled quality of life because, you know, your life, it's defined precisely by the value you put on it. You've probably

looked at this in your work and if you look at sort of the beginnings of life insurance and the way Ted Porter talks about it, it's so hard to put a value on the quality of life because it is worth as much as it feels to the person living it. And when they first started trying to do this, everybody was absolutely outraged. So you know what they do is they get a proxy measure, which is, you know, average amount of income, you know, in life. So of course this is completely biased, but we don't even really question that anymore, these tools from insurance.

Caroline: Yeah, I - one of the ways, Coreen, that I think you have tried to make, to use Kelsey's wonderful expression earlier, a "usable history," is by writing policy papers. So can you just tell us a little bit more about what kind of audiences you're envisioning for this sort of work you're doing and how you find ways to reach them?

Coreen: That's a good question. So I've published policy papers recently that outlined how what I termed the "disability data gap," has resulted in technology being used to deny benefits to the disabled. And I did this in a *History and Policy* article that drew parallels with the universal credit system, which is the benefit system that has recently been operationalized, extremely unsuccessfully, here in the UK. And I argued that we can use history to reveal how technologies have and continue to be operationalized to deny benefits to the disabled. And I've also published on how technological standardizations have been dependent on disabled users, and how disabled innovation is crucial to the development of technologies. And more recently I published on the relationship between assistive technology and stigma, and the way that health technologies can impact on the ways that we experience health and illness. And like I said, I really think that it is crucial that academic work on disability history can be translated to improve the lives of disabled people today. I worked with all of my colleagues in the Life of Breath Project to create a policy report that looked at some of the ways in which we could understand breathlessness in a medical setting using the kind of insights from the work we've been doing for the past five years.

And in terms of engaging with the public and with disabled users, this is a really tricky thing, I think. And it would be great to talk to you more about that. Certainly for engaging with people with hearing loss - I mean, first of all you have to make sure that everything you are doing is accessible and that's really important, especially now. And I've been doing a little bit of work on subtitles recently with Jai, which, you might be, if you follow me on Twitter, you might have seen I've had varied success with that, which we won't go into [laughs]. But when I first started working with the Deaf community, it was probably during my PhD, and it was really difficult. I mean, impact and engagement work is difficult and it's so important that you have, that you're doing something that is going to be beneficial for the group you are working with. It, you know, has to be a two way process. And I, I remember working with the hearing aids in the Thackray Museum, with a group of people with hearing loss and they had such insight into the objects and how they were used, and ways in which they would be helpful. They just knew things about them that I would never have been able to know myself. So it was absolutely invaluable for me and it completely changed the whole path of my research because I started thinking so much more about embodied knowledge and

appropriation of that, and how to find it and measure it. And the ways people try to reveal it, I guess, in history. But I did wonder for a long time after that, what the people there had really got out of it, apart from our kind of discussion of history.

And to bring it back to your point about the Black Lives Matter protests, Kelsey, I saw a great video, and it was on Twitter and I cannot find it and I've looked for it and looked for it. And it was somebody, a reporter, I think maybe on CNN, talking to a Black couple and asking them if there was anything they would want people to know about white privilege. And they responded with this incredible answer about history and about how important it is to know your history. Because if you don't know your history and where you come from and if you don't have a blueprint for your potential and what you could do, then it is so much harder to see that. And having lost that history, is such a harm. And that really made me think about the kind of personal ways in which we engage with our own history. And also groups that don't see themselves as a group, as I was talking about earlier, adults with hearing loss don't identify as a group as such, so there is not this idea of a history there. And maybe there should be.

Caroline: You recently got a job as a lecturer in twentieth century British history at Durham University, so huge congratulations! What are you going to be teaching and how do you feel about teaching about the histories of disability and access and technology in the middle of a pandemic, when students and teachers are having to make use of these new technologies to communicate with one another?

Coreen: It's a challenge, for sure. But I'm so excited to have the chance to teach on the subject of disability history. I really want disability history to be something that's not an add-on to traditional history, but something that is absolutely integral. And I think I'm teaching... Well, I think, I *know* I'm teaching two courses that are specifically focused on disability history. The first one I've called "Evaluating Medical Science in Britain through Disability History, 1880 - 1990," which is designed to explore the various ways in which the body's been conceptualized as different by medical science in the twentieth century. So really kind of looking at differences in body and mind and the influence of medical practices grounded on difference. So kind of looking basically at the ways that the body and mind has been considered to be deviant or different, and how it's been treated as such. [**Caroline:** Interesting] And then alongside that, a kind of more historiographically focused course, which is meant to look at how technologies classify normalcy and disability and how these processes intersect with things like race and class and gender. So sort of starting off with theoretical considerations about how we've categorized the body as abnormal or normal, and then looking at how individuals experience this label.

Kelsey: That sounds phenomenal, Coreen. It's been so lovely getting to know you and hearing more about what you've been up to. We'd love to take this opportunity to open things up: is there anything else that you would like to share with us? Other forms of public history work, other projects that you're really excited about that you want to plug? Anything you want!

Coreen: So thank you for that. I think just really, like I said at the start, Kelsey, your work sounds so interesting and I really want, in the future, to try and do a little bit of work on epidemiology more broadly, and the way that epidemiology uses reference classes, which I think might tie in really nicely with your work. And this is something, like I said, I've been thinking about in relation to the way that data has been used in the pandemic and the kind of discussions of things like, you know, women are less vulnerable to COVID. And the way people initially thought that was, you know, related to a stronger female immune response. [**Kelsey:** Right] And the idea that it is maybe because of smoking, and how difficult it is to differentiate between the biological and the social, and the ways in which history warns us again and again that advocating for biological essentialism is often used to harm vulnerable groups. So it would be great to talk to you more a little more about that for future research, I guess. That's something I definitely want to work more on.

Caroline: Well, thank you so much, Coreen for joining us, for sharing your immense knowledge and wisdom and breadth of work. It has just been a pleasure. So thank you.

Kelsey: Thanks so much for joining us, Coreen.

Coreen: Thank you so much for having me on the podcast. I've really appreciated all of your insightful questions and having the chance to share my work with you. Thank you.

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Caroline: Thanks to everyone out there for listening or reading the transcript. Please join us again next time. Bye bye!