Host: Dan Cohen, Dean of Libraries and Vice Provost for Information Collaboration at Northeastern University.

Guest: Sari Altschuler, Assistant Professor of English and Associate Director of the Northeastern Humanities Center at Northeastern University

Host: Dan Cohen: 00:00 Reading is one of the most profound things we humans do. A way for our minds to encounter new ideas and our imaginations to run wild with stories. For many of us, reading means words in black ink on a white page, or pixels on a screen. But for some who have visual impairments, it involves feeling raised fonts, a multi-sensory app that is both remarkable and poorly understood by the sighted. Today on What’s New, Touch This Page!

Host: Dan Cohen: 00:30 I'm Dan Cohen and this is the What's New Podcast. Welcome back. I'm joined today by Sari Altschuler, who is an Assistant Professor of English and Associate Director of the Northeastern Humanities Center at Northeastern University. Working with the Northeastern University Library, which I direct, and which has an interest in all forms of reading, and Waleed Meleis, who you may remember from an earlier episode of this podcast, for his Enabling Engineering Initiative, which builds devices for people with disabilities.

Host: Dan Cohen: 00:59 Along with Dave Weimer at Harvard, and the Perkins School for the Blind, Sari is the Co-Creator of the Touch This Page! Project, which opens this week in our library, and three others in the Boston area, to provide a wide audience with the experience of tactile writing systems, and to show how people around the world use them.

Host: Dan Cohen: 01:17 Welcome to the program, Sari.

Sari Altschuler: 01:19 Thanks so much.

Host: Dan Cohen: 01:20 Great to have you on the program. And it's also great to work with you on the Touch This Page! project, which I have to say, has given me real insight into an area I didn't know much about.

Host: Dan Cohen: 01:30 I think to start off, I guess, one of the most surprising facts I learned from you in the creation of the project was that, really only a small percentage of visually impaired people actually
know how to read braille. And that's the one tactile writing system that I think our audience is probably familiar with.

Host: Dan Cohen: 01:48 So can you just set the table for us? What does the landscape look like, the population, the general population of the visually impaired, and how many of them actually know how to use these raised fonts?

Sari Altschuler: 01:59 Yeah, so it's a great question. I think most of us are familiar if we've been in elevators, or been in various public spaces that have braille translation, we think about that as an accessible form. And it is, it just happens to be the fact that about only 10% of people with visual impairments actually read braille. And so this makes sense when you think about the lower percentage of people who are actually born with congenital visual impairments.

Sari Altschuler: 02:31 So a lot of people become blind or low vision over the course of their lifetime. I think if the numbers on that were reversed, then you might see more attention to ... I mean, obviously, there are some really wonderful schools for blind and visually impaired students, but if a person develops a visual impairment when they're 60, they may not be, have the same kind of incentive to learn braille.

Sari Altschuler: 02:55 So another thing that happens, actually, is that as people age, their tactile sensitivity gets much lower, and so Moon type, an old form developed in the 19th century, which looks very different from braille, is another tactile form that's still in use, especially in the UK. But a lot of people use audio books and other kinds of audio forms to get access instead of thinking about tactility.

Host: Dan Cohen: 03:24 So maybe if you could tell us a little bit about this history because I find it fascinating. You mentioned Moon type. We've seen for this exhibit, the creation of 3D replicas of Boston line type, which is another kind of raised font.

Host: Dan Cohen: 03:37 All of these different kinds of, I guess, typefaces and fonts that are not familiar to our audience. Where do they come from?

Sari Altschuler: 03:47 It's a great question. So beginning in the 18th century in France, Valentin Haüy developed the first real raised print Roman font. It was a very ornate font, and it was meant originally, and this is also the sort of spirit of Boston line type, it was meant to be a form that both sighted individuals and people with visual
impairments could both read. So there's a fantasy there about a kind of universal access.

Sari Altschuler: 04:13 And so it looks like raised print Roman letters that you might find in a book for sighted individuals, and there was a lot of debate in the 19th century about exactly what the form should be. So there are a number, this is a real competition, especially in the first half of the 19th century, over what the most accessible form is.

Sari Altschuler: 04:36 There’s a form developed in Philadelphia that is striving to rival Boston line type, which was invented by the Perkins School for the Blind. And those forms of raised Roman letters are also in competition with what the inventor of Boston line type, Samuel Gridley Howe, might call arbitrary forms. Forms that we actually are more familiar with, like braille, or a form invented in the United States called New York Point.

Sari Altschuler: 05:06 So in the historical literature, this is popularly ... There's a whole sort of debate over which form is best. Braille, in the United States, doesn't come to be the form that is most used. Until the 20th century, there was a heavy investment in Boston line type.

Host: Dan Cohen: 05:27 Right, and for our audience, so Boston line type looks like a font that you would have on your computer. It’s a little bit unusual, in that it has a very specific kind of angle to some of the letters, I assume for easier touch identification. But as you noted, it is one of these things where it’s recognizable.

Host: Dan Cohen: 05:49 I mean, to the sighted, you can look at an example of this and see the shadows that it casts, and realize that it’s just a font, a fairly fancy font that is raised up off the page through a special printing process. And there were several of these kinds of typefaces around that had it, as you mentioned.

Host: Dan Cohen: 06:11 What spurred this transition to what you call the sort of arbitrary type? Because braille is not an obvious kind of thing. I mean, it is actually an incredible, almost intellectual advance to think about a form that isn’t just a raised, regular Roman font.

Sari Altschuler: 06:30 Well, it’s a great question and one of the surprising things when you do a little bit of research or read a little bit about this history, is that braille was invented in the 1830 ... Well, it was around in the 1830s, and certainly Samuel Gridley Howe, when he invented Boston line type knew about braille. So braille exists during that time, but there's this concern about isolation. And so Samuel Gridley Howe and others like him in the US context,
who are striving for what disability rights activists and scholars might now call universal design.

Sari Altschuler: 07:03 They're looking for a kind of universal form, and that's the kind of resistance to braille. They think that Boston line type will be more universally accessible and that braille will isolate the population of individuals with visual impairments from other individuals. Or for example, their parents may not want to learn it. So there's a real anxiety about braille, but it turns out, and we hope that this is something that people who visit the exhibit will kind of get a sense of for themselves, a tactile sense.

Sari Altschuler: 07:36 Braille is just much easier to discern tactically than Boston line type is. And so even very proficient readers of Boston line type, Samuel Gridley Howe estimated that they were able to read at about a third of the speed of a person reading out loud, by sight. So that's okay, if you know anyone who reads braille with great proficiency, you know that they read much faster than that, and so I think that the kind access issues are obvious, once you have the sense of the kind of tactile differences between the different forms.

Host: Dan Cohen: 08:17 Yeah, it really did feel to me in the prototype that you gave me the other day, of the Boston line type on a 3D printed model, that just closing my eyes and putting my finger across it, it's really hard to tell.

Host: Dan Cohen: 08:32 For instance, a T from an L, unless you hit the right part of the T, they've got similar kind of serif endings to them. If people are familiar with that kind of terminology, and so there's just not a lot of distinction between some of the letters from a just pure touch base.

Host: Dan Cohen: 08:53 And it sounds like these raised little nubs of braille give you that very clear distinction very quickly.

Sari Altschuler: 09:00 Mm-hmm (affirmative), for people, again, who have that kind of tactile sensitivity, as I mentioned, yes. That's absolutely true, as we age, we need sort of different forms. So Moon type is actually a more rounded form, but has different advantages.

Host: Dan Cohen: 09:13 Right. So there was really a kind of practical application of braille that eventually led it over the 19th century, but it really took decades into the 20th century for it to become the predominant form of tactile writing systems?

Sari Altschuler: 09:31 In the US.
Okay, right. Sure.

So there's a lot of resistance in the US. It's adopted much earlier in France and in Britain. And I think that, in part, that's due to the success of Boston line type.

Right.

So there was a lot of money and a lot of interest behind the projects that were happening at the Perkins School for the Blind. And I think that that interest and investment actually is one of the things that delayed movement that actually happened across the Atlantic much sooner.

So I assume that religion was one of the big spurs behind the adoption of all of these tactile writing systems.

So one of the first things that Samuel Gridley Howe prints and Boston line type is, portions of the New Testament, specifically the ones in which Jesus cures blindness. But, yeah, absolutely. So it's also a spur for actually creating the schools, themselves, and so the-

Perkins was-

Print technology-

Founded at this time, as well?

Absolutely.

Yeah.

Yeah, it founded in order to try to save ... This is especially true with the schools for the deaf, to try to save the souls of students, who maybe couldn't have been reached otherwise. In the case of Perkins, the most famous student before Helen Keller was a lady named Laura Bridgman, who was also deaf-blind, and the first deaf-blind student to with whom other people could sort of communicate, and who learned to read and write. So Howe, and this is a sort of always the tension with these forms of instruction, Howe had this fantasy about her that he really promoted transatlantically.

She was kind of a transatlantic celebrity. One newspaper in the 1850s said, "She was ... Her fame was exceeded only by the Queen of England." But he had this fantasy that he could use
her as a kind of tabula rasa, so he didn't want anyone to tell her about God. He wanted to know what she would figure out by herself, and then he went on a year-and-a-half long honeymoon, in which some people really worried over the fate of her soul, and told her. And then he thought because she was kind of a ruined experiment.

Sari Altschuler: 11:42 And so there's a lot of like really ugly paternalism involved, and I think a lot of these forms of education. But also, certainly, a lot of benefits. I think without that kind of getting people access to the Bible, I'm not sure how much money there would have been behind developing these kinds of forms. Those things are so much entwined in the 19th century.

Host: Dan Cohen: 12:05 Right, and these Bibles, in fact, are some of the first printed materials-

Sari Altschuler: 12:06 Yes.

Host: Dan Cohen: 12:08 In braille and Boston line type.

Sari Altschuler: 12:10 Yeah, Samuel Gridley Howe was actually really against the printing of things like fiction. So the first things that are printed are Bibles. Natural philosophy, which is like early sort of scientific stuff, and kinds of like informative and religious texts.

Sari Altschuler: 12:28 It's not really until he dies in 1876, that people begin printing things like The Scarlet Letter, Hamlet. And the students are very excited, and part of the reason why they begin printing them then is because of the sort of pleasure of reading-

Host: Dan Cohen: 12:44 Wow, that's so interesting.

Sari Altschuler: 12:45 But that takes decades.

Host: Dan Cohen: 12:47 You brought up two very interesting points in talking about this evolution of type. One of them is around universal design, which I want to get to in just a second. But the other one is really about, I guess what we would call mainstreaming of students today. I mean, students with, for instance, who are on the spectrum, on the autism spectrum, we now have a principle of trying to mainstream them as much as possible, having them go through normal courses in K-12, for instance, with obviously, with some additional assistance.

Host: Dan Cohen: 13:16 It sounds like in the 19th century, that was at least what some people were going for with visually impaired people, as well.
Sari Altschuler: Yeah, I mean, I think that they would have thought in the 19th century about this a little bit differently. I mean, one of the ways of thinking about this is that there were schools that were set up specifically for students with visual impairments, or schools for the deaf, actually are a little bit earlier than the first schools for individuals with visual impairments.

Sari Altschuler: But there is an attempt to, I think, render disability a kind of a moot point. So a fantasy about creating a world in which disability or impairment actually no longer matters. And I think that that's actually has to do very much with fantasies about citizenship in the early United States. So thinking about how to make individuals who have visual impairments, how to bring them into, for example, a broader, like emergent or exploding print culture.

Sari Altschuler: Or, in the case of individuals with auditory impairments, thinking about oratory and the ways in which individuals with auditory impairments can't hear a preacher, can't hear a speaker, and so how do you kind of fix that problem, and Howe, and this is one of the reasons why he is kind of a hero for the community of individuals with visual impairments, but kind of a really bad figure in the history of deafness, is that he was very much against sign language for the same reasons that he was against braille.

Sari Altschuler: And the exhibit talks a little bit about this. And we want people to think about what's at stake in that conflict. And thinking about what it means, what the sacrifices are sometimes, when we think about a kind of universal form, as opposed to a form that might kind of maximize a particular sense, or a particular way of accessing knowledge.

Host: Dan Cohen: Yeah, I mean, this real tension, right, between what I was just calling mainstreaming, may be not the best word, and isolation also probably not the best word. But that notion of, "Are we separating these people out in some way? Are they going to have a different literary stream?"

Host: Dan Cohen: A different stream of ideas and stories, as I mentioned in the opening. Very difficult. I think one of the lessons that you really brought to this exhibit is that, as much as we strive for universal design, and I think our audience can think about things like curb cuts is probably the classic example, or ramps, that we have many of these on campus, obviously, both allow for people who may be in wheelchairs to access all of our buildings, but also provide ramps and so forth for other purposes, as well.
Same thing with curb cuts, they're used in many different ways now.

Strollers, dollies.

Yes, right. Dollies, right. Deliveries, all of these things have, it's just a win-win situation, I guess. And one of the things you point out that's sort of a difficult lesson, is universal design, in this case, doesn't always result in a win-win.

Yeah, absolutely. And that's one of the things that we want to at least invite our visitors to think about. So to think about the moments at which accommodation and access actually work in tension with one another. So for us, maybe the most obvious form of this is to think about the tension between technologies for reading that are developed for people with visual impairments, versus people with auditory impairments. We think about closed captioning as being a really good technology for individuals with deafness. But when you think about closed captioning, it doesn't really do anything for people with visual impairments.

And likewise, when you think about kind of audio books, as a real solution or real technology that individuals who are blind and low vision, make a lot of use of, that is a totally inaccessible form for people who are deaf. And sometimes, and certainly, two really great scholars, Richard Godden and Jonathan Sye have pointed out, that sometimes when we think about universal design, we actually make things less accessible for certain individuals because we stop thinking about particular kinds of embodiment and varieties of embodiment.

And we have a fantasy that there's going to be a kind of one-size-fits all solution, but I think universal design, it's kind of great as a clarion call. And then the question, I think, is always to think also about particular forms of embodiment or cognition for whom the forms that we imagine as universal may not be as accessible.

As the specific embodiment of the audio book, and I know this as a librarian, that and someone who also follows book sales. I mean, it is the one huge area of growth, and this podcast is probably part of that, as well, right. We now have all this auditory content that didn't use to exist.

It's the one bright spot in publishing, is really well-narrated and read audio books, fiction, and non-fiction books are really taking
off. There's things like Audible that are huge businesses. This changed the landscape for people with visual impairments in the 21st century.

Sari Altschuler: **18:51** Absolutely. Yes. Sorry-

Host: Dan Cohen: **18:54** [inaudible 00:18:54].

Sari Altschuler: **18:54** [inaudible 00:18:54] the question.

Host: Dan Cohen: **18:57** Well, I mean has it decreased, for instance, the amount of braille that's now printed because there's this kind of content?

Sari Altschuler: **19:04** I mean, I think that some of that fantasy certainty does decrease the ... I mean, I don't ... I hesitate to speak without knowing exactly, but I do think that it can't but be that the access provided by features like Audible or other kinds of audio books, or even certain kinds of technologies that turn text into speech. Those technologies seem to offer a kind of fix, and that's one of the things that we really want to highlight in the exhibit. Is that, they seem to offer a kind of fix, but for us, our interest is in thinking about those as translational technologies, as opposed to reproductive technologies.

Sari Altschuler: **19:45** So one thing that they don't give you access to is knowledge that you might gain through other senses, namely through touch. And so I do think that that is most likely a huge reason why braille literacy has declined and continues to kind of be pretty low. But I think that there was a fantasy there, again, that things that you perceive through auditory means, are the same as things that you might perceive through other senses. And one thing that we're really interested in is getting people to think about the ways in which actually you learn differently, through different senses.

Host: Dan Cohen: **20:26** So take us into the Touch This Page! exhibit for those listening to this podcast. What's involved? What experience will the visitor to one of these exhibits have?

Sari Altschuler: **20:37** So the exhibit is framed in terms of, as you mentioned, a kind of multi-sensory. Thinking about reading as a multi-sensory experience. So when you walk up to the exhibit, you'll find that there are six stations. The stations, themselves, ask and invite visitors to think about the ways in which the reading that they already do involves multiple senses. So we might think here about, you had mentioned text on the screen when you use an iPhone, or some other kind of smart phone, you probably do
kind of use your fingers, either to highlight or to sort of maximize, or minimize the text.

Sari Altschuler: 21:18

There is a kind of haptic experience with that technology that we don’t normally think about. Likewise, in the 19th century, you might think about the fact that a lot of people experienced reading via reading out loud. So people often read to each other, rather than reading silently, visually, or even thinking about the experience of holding a book, a lot of people have talked about the difference between, which is ultimately a kind of haptic difference. The difference between reading a book and reading on a screen, and how it affects memory.

Sari Altschuler: 21:53

That isn’t, that has to be, in some ways, also about the kind of haptic experience of reading, but we don’t think about it that way. So the exhibit asks people, it sort of prods people to think about aspects of reading that they may not necessarily think about otherwise. And to stop thinking about reading, especially for people without visual impairments as a purely visual act.

Sari Altschuler: 22:18

And so the way that we go about doing that, is to begin with the sort of broader question about the ways we read, and then to proceed through, there’s six objects that we’ve reproduced through 3D printing with the help of the enabling engineers, from the archives of the Perkins School for the Blind, which are examples of raised print from the Perkins archives. And each of those examples is both a kind of history lesson in the sort of history of blind education and blind reading. And also, meant to ask all readers to think differently about the ways in which they read.

Sari Altschuler: 22:58

And so some of the objects actually are meant to provoke other ways of thinking about things. For example, one of the objects is the eclipse of a moon from a perspective that is not the Earth. So and this is from an 1830s natural philosophy book. So thinking about the fact that that perspective actually isn’t a visual perspective that any sighted person can occupy, or could occupy before getting in the spaceship. Or, there’s also the same is true of a map of Massachusetts that’s in the exhibit, or a set of snowflakes.

Sari Altschuler: 23:36

Each of these things require other kinds of technology, in order to render them visual. And so we’re asking people to think a bit about those tensions, and the last part of the exhibit that people will encounter, once they’ve had the experience with the objects themselves, is first person accounts from students in the
19th century, who used these materials. So Helen Keller, for example, who really preferred to read by herself.

It certainly, there was some finger reading that happened because she was deaf-blind, between her and her teacher, but she really preferred to use these books by herself. So thinking a little bit about what her experience was. She says, "That when she reads these books, she's not disenfranchised." So thinking about what that kind of freedom means for her.

Right. Right, and that connection.

Mm-hmm (affirmative).

The exhibit for me, it does bring up, as you've outlined for us so well, how unnatural reading is, right. It's a very learned skill. Sighted people learn it in a specific way from parents, or at school, or the library, or hopefully, all of the above. But it has this specific cast to it, and as you noted, I think this exhibit will feed into some of these debates that we're having over reading between audio books and reading on the iPad that I have my show notes right in front of me on, and in paper.

And everyone is debating right now, what is really a tactile experience? What does it mean to read an e-book versus a print book, or to listen to it? And we're having lots of debates and op-eds about which one's quote/unquote, "The best." And I think one of the things that this exhibit will do, is provide even more examples of that kind of experience, right.

Mm-hmm (affirmative). I just wanted to add to that to say, that I think we have a fantasy that's also about adulthood and the ways in which visual reading for sighted people is a kind of adult practice, whereas reading for children has a lot to do with touch. So when you think about the way that children's books often function, they'll have like pieces that you pull back to reveal a certain feature or animals that you can pet because they're made of different fabrics. And so I don't think that we have this sort of singular, this sense that reading is only visual for children.

I think, actually, and this is something I think is really interesting. I think it's something that we fantasize about for adult reading. And so thinking also about training, that's I think a way in which we narrate reading as involving particular senses and trick ourselves into thinking that it doesn't involve others.
Host: Dan Cohen: 26:23 You’re also the author of a recent book called The Medical Imagination, and one of the things that I think the exhibit also brings up is, is in fact, the imagination. You bring up for instance the moon case of the need for us to sort of imagine what it would be like to look at the moon from a very different angle.

Host: Dan Cohen: 26:39 How important is it for us to bring back in these, what are really humanistic skills, into areas like medicine, which after all, often does deal with people with disabilities? And there's often not a lot of imagination going on right now, say in the medical field.

Sari Altschuler: 26:58 Mm-hmm (affirmative). That’s a great question. And yeah, so in the book, I was really interested in thinking about the history of using humanistic practices and humanistic ways of thinking about things for medicine. So the book involves thinking about forms for imagining different medical perspectives. And I think that one thing that’s kind of neat about the 19th century, is the use of literary forms for medicine to try to get at experiences that are different from your own, for example. So not a fantasy about like the human body, as something that, again, that is universal.

Sari Altschuler: 27:36 But the human body as something that might actually have a variety of forms. And that one of the doctors that I write about in the book, is interested in imagining... It’s a sort of odd novel about imagining himself into different kinds of bodies, and thinking about what it would feel like, and what it would like to be inside those bodies. That’s something that I think is quite a bit different than the contemporary medical field. But that involves, I think, a kind of humility that I hope that the exhibit sort of congers and also that I think is sort of important, at least for the 19th century history of medicine.

Sari Altschuler: 28:21 But also, I think, today, I think we could use a little bit more sense that there are different ways of knowing the world, and that those ways of knowing actually produce very different kinds of information. So I think in terms of the connective tissue between the exhibit and the book, if there’s anything, it’s probably that, right. The sense that there are different ways of knowing the world, and that different kinds of embodiments, or different ways of thinking, in fact, give you different kinds of information.

Sari Altschuler: 28:49 We know that when we use a particular kind of discipline or structure to think about something, it kind of cuts away a lot of, it sort of crystallizes particular kinds of information. That’s a very useful and necessary process. It also means that there’s a lot
that we miss in the cutting away, and that other perspectives can bring that. And I think that's my hope for the humanities, for the future of medicine, as well.

Host: Dan Cohen: 29:14 You've got some great examples in the book, and indeed your conclusion of just thinking about things like art history, and how art history involves really sophisticated forms of seeing, and really understanding what an artist has sort of put into the painting, how it was constructed, and those kinds of things are very much sort of translational. They're humanistic skills, but they're incredibly important in sort of assessing a patient, and thinking about forms of treatment.

Host: Dan Cohen: 29:40 And also, just thinking about the human being, as a human being, who might have very different perspectives and goals in their life, and ways to approach that. It seems like a very important lesson for us. And that's certainly a theme of the Touch This Page! exhibit, which opens in the Boston area, here in Snell Library, on the beautiful Northeastern Campus, and at three other sites around the Boston area between January and April 2019.

Host: Dan Cohen: 30:08 We hope that you will visit one of these locations. We'll have information on the What's New website, whatsnewpodcast.org. And of course, while you're there, you can catch up on earlier episodes of the podcast, including our podcast on enabling engineering. Do subscribe.

Host: Dan Cohen: 30:23 And Sari Altschuler, thank you so much for joining us on the program today and to talk about the Touch This Page! exhibit.

Sari Altschuler: 30:29 Thanks so much to you.

Host: Dan Cohen: 30:38 What's New is a production of the Northeastern University Library, with engineering by Jon Reed and production assistance by Evan Simpson, Debra Mandel, Johnathon Iannone, Debra Smith, Sarah Sweeney, and Brooke Williams. You can catch all of our episodes, show notes, and transcripts at whatsnewpodcast.org.

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