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**Léonie Watson on Accessibility**

“Disability is not just about people like me who have a recognized disability. It’s actually about all of us.”

**Léonie Watson** is an accessibility engineer, W3C director, technology writer, and speaker. She’s director at TetraLogical, a consultancy focused on accessibility for emerging and existing technologies. In this conversation, we focus on the role of accessibility in producing experiences that work better for everybody.

**Show notes**

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* [Blog - TetraLogical](https://tetralogical.com/blog/)
* [Screen reader - Wikipedia](https://en.wikipedia.org/wiki/Screen_reader)

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**Transcript**

**Jorge:** Léonie, welcome to the show.

**Léonie:** Thank you, Jorge. It’s nice to be here.

**Jorge:** Well, it’s very nice to have you. I’m actually thrilled. I was telling you before we started recording that I first became aware of your work many years ago at a conference where we both spoke at in London. And I just find it thrilling to be able to talk with you today. How do you describe your work and your trajectory?

**About Léonie**

**Léonie:** Mostly luck, in terms of the trajectory. I know lots of people who have very thoughtfully planned their lives and they have two-year and five-year and ten-year goals. And my life has never been like that. My trajectory has been just one kind of event after another and it just so happens that for me, every event has led to a really good or interesting thing.

Career-wise, started off working in tech support in the mid nineties, really when the web was new. And it just so happened that the internet service provider I was working for at the time decided to open up the help desk 24 hours a day. Now, this was ‘96, ‘97; very few people were using the internet or the web at all at that point, let alone at three o’clock in the morning. Working the night shift was just really boring, so I taught myself HTML and then a bit later, when it became more popular, CSS and a bit of Javascript. And then, before I knew it, I was looking after the company website.

That was just where the unexpected events started to fall into place. I’d lost my sight, took a couple of years out around the turn of century, and when I felt the time was right to go back into some work, I happened to respond to an email from someone who said they were looking for opinions from screen reader users, which I had recently become. I responded to that email. That led to me getting a job with actually the organizers of the conference that you and I both spoke at. And my career and my trajectory have gone on from there. It’s just been a series of events that, as I say, have worked out okay so far. I’m having fun, if nothing else.

**Jorge:** What are you doing now? What does your work consist of?

**Léonie:** Now actually, a lot of my time is running a company. I founded TetraLogical at the start of 2019, so a big part of my life now is away from accessibility and the practical side of things. But it’s always been important to me to keep doing that part. That’s what I really love doing.

So, most of the practical work I do these days is around sort of fairly freestyle consultancy. We have a lot of long-term partnerships with organizations and under that umbrella we end up doing all sorts of things. For example, with one organization, I’ve just been doing a bunch of research and investigation into the accessibility of SVG and data visualizations, which has always been a personal interest of mine.

But this particular partnership with an organization let me do it as part of my day-to-day work. Other times it might be training sessions. I spend a lot of time sharing my experiences as a screen reader user speaking about them. But then exploring websites in real time with teams so they can start to understand how someone like me can navigate and investigate and explore a site and get a sense of some of the problems we overcome.

So it’s lovely. It’s a really nice mixed range of different pieces, all in and around the idea of accessibility and making the web more inclusive.

**Screen readers**

**Jorge:** That sounds like really important work that you’re doing. Before we get into it, you’ve mentioned screen readers several times, and I’m assuming some folks listening in might not know what you’re referring to. What is a screen reader?

**Léonie:** Sure. So it’s a piece of software. Everybody has one actually; they’re available on all devices. So, whether you have an iPhone, an Android device, a Mac, Windows machine, Linux machine, there will be a piece of software in there called a screen reader. And what they do is they convert what most of you, I assume, will be looking at on screen into synthetic speech. So, in other words, I listen to content where you may well look at what’s on screen.

**Jorge:** So, basically — just to try to articulate it back to you — as you’re navigating the web, rather than seeing a visual user interface, you have kind of an aural user interface where it’s reading to you what is being displayed there.

**Léonie:** Yep, absolutely. And sometimes it can be like saying to someone, “read me that webpage, from top to bottom,” you know? I can get my screen reader to do that. But actually, what we do more often, especially on webpages, is we navigate around by different kinds of things on the page.

So, headings, for example are a very common way to navigate around a webpage for me. I’ll move from one heading on the page to the next until I find something that sounds like it’s the section of the page I’m interested in. And then I might say to my screen reader, “okay, read everything from this point onwards.” So, yeah, they’re really versatile bits of software. Very, very useful — especially when things are accessible and they work well together.

**Jorge:** What I think is implicit in that is that the process of making digital systems — I’m going to go try to go beyond just the web — more accessible is not something that the machines can currently do for us by default; it’s something that we have to put work into. Is that right?

**Léonie:** Yes and no. Yeah, most common software SDKs — software development kits — have a reasonable amount of accessibility built in. Similarly, depending on what you build your websites from, HTML has a good level of accessibility in its own right. JavaScript frameworks, arguably less so in places. But a lot of the tools we use to build interfaces of different kinds do have good accessibility already built in. It’s more as we move into custom components and controls that more of the responsibility falls to us. But yes, as creators and builders of interfaces, we do have a responsibility for the accessibility. Absolutely!

**Jorge:** I’ve spent some time going through TetraLogical’s website — which I encourage folks to do because I found valuable information in there — and I wanted to ask you about some of it. So, you talk about four principles for designing more accessible experiences. And the principles are ‘inclusive,’ ‘sustainable,’ ‘ethical,’ and ‘original.’

**Léonie:** Mm-hmm.

**Jorge:** I was wondering if you could tell us a bit more about all four of those. But I’m particularly interested in ‘sustainable’ and ‘original’ — because ‘inclusive’ and ‘ethical,’ I can get a sense of why those would be important. But can you tell us a bit more about those?

**TetraLogical’s principles**

**Léonie:** These principles are actually more for the company than practices of designing and developing. When the company got going, we wanted to frame our philosophy, if you like, in a fairly simple way. And so, the idea of these four principles came about. They’ve changed a little bit over the years since, but the four you’ve just mentioned are the principles we use whenever we make decisions. It might be when we take on a new project, work with a new organization, buy a new service or a bit of software — doesn’t really matter; what it is we do, these are the principles we try and use when we make decisions.

You asked about ‘sustainable’ and ‘original.’ I’ll take them in reverse order. ‘Original’ is just about the idea of not falling into the same patterns and habits that we see very often across the accessibility industry. There are some really big capable companies out there, but they’re very, very focused on doing what we call audits: checking interfaces against recognized guidelines, producing reports, issue reports, you know… helping teams fix those issues in some cases.

But they become very repetitive, if you see what I mean. There’s not much originality in those services. We do deliver things like that. Of course we do; we’re an accessibility company. But far more than that, we wanted to be able to work on pretty much any project that we felt we could lend our expertise to. And so, from the beginning, we’ve had organizations come to us and go, “we’ve got this problem, can you help us solve it?” And we’ve gone away and had a bit of a think about it and gone, “yes! You know what? I think we can!”

So, a good example is our recruitment service. It’s now on our website. We had two or three organizations come to us and say, “look, we need to build an accessibility team. We know we’ve got to recruit people into different roles who’ve got accessibility knowledge and experience, but we don’t have enough accessibility knowledge of our own to be able to do that and do it well. Can you help us?”

And so, we went away and came back and thought about it, and over the course of two or three engagements with those organizations, we help them do it. And then they’ve all got accessibility teams that are flourishing now. And we came out with another service that we’ve just added to our portfolio.

So, it was really that idea. And then, just thinking outside of kind of typical thinking when it comes to problems. A lot of accessibility problems often are very, very basic. It’s helping people write better text descriptions so someone like me who can’t see an image, can get a sense of what’s inside it or what it conveys.

But it was being able to think about some of the tougher problems; the harder problems. What do we do when we’ve pushed this technology as far as it can go in terms of accessibility, but it’s not quite good enough? How can we change what we’re doing? How can we think of new technologies? All of those kind of things. So, yeah! It was that idea about original thinking and trying to solve… I think, as it says, difficult problems but in simple and pragmatic ways.

‘Sustainable’ actually is in some respects a familiar word to most people in many different contexts. But for us, it’s the idea that accessibility itself needs to be sustainable within a team or an organization. And again, it’s trying to move away from the industry default. Checking a website or a piece of software at the end of its production when it’s almost ready for release, and then filing a bunch of issues — that’s not a very sustainable way to do accessibility.

So, for us it’s about building up knowledge in teams, training, upskilling. It’s about thinking about accessibility right from the very beginning of product development requirements gathering. More than that, getting policies and teams, maybe champions, networks. I’m making it so that it doesn’t matter if people come and go because in teams they often do.

We know, especially at the moment, people are changing jobs all over the place for a whole bunch of different reasons. But the knowledge and the processes have all got to stay within the organization or the teams. So, it’s there forever. It’s just part of the DNA of what teams and organizations are doing.

**Jorge:** I was going to ask you about that. Part of the genesis of this conversation, as I mentioned before we started recording, is that I taught a workshop over the summer — an information architecture workshop — and one of the participants brought up the question about the relationship of information architecture and accessibility. And I’m just bringing this up now because you mentioned the fact that some organizations seem to address this subject kind of as a checklist towards the end. Like, let’s make sure that the images are tagged or whatever, right?

**Léonie:** Mm-hmm.

**Building accessibility into the architecture**

**Jorge:** But, I’m wondering about what if anything we can do in the earlier process of the design of an information environment to maybe structure the system so that it’s more accessible inherently.

**Léonie:** Sure. One of the first things — and it’s very often overlooked — is starting with your user’s requirements, you know? It’s really tempting to just dive straight into architecting and designing and building something without really stopping to consciously think, “not everybody’s going to use this thing in the way that I do.”

For the most part, people working in design development tend to be mouse users, tend to be reasonably smart, reasonably able-bodied. And so, it is tempting to just build stuff in your kind of own style. That’s just a human trait. But stopping to think that actually people like me who can’t see, the way the system is architected or displayed or presented on screen, what does that mean in terms of what I need from the system? What about somebody who’s, you know, unable to use a mouse? Can the system that we’re architecting be navigated and used and interacted with a keyboard? What about someone who’s deaf or hard of hearing? If there’s a multimedia or an audio aspect to whatever it is, how will we manage that?

Really from the very first moment you start planning whatever it is you’re going to build, thinking about how people are going to use it, and therefore what they need is a really good start. And then from there you can translate that into user stories, you know, if your teams happen to use those.

And once you’ve got those in place, of course you’ve got really good reference points for making sure that all the way through, everything that comes after that — information architecture, the design, the build, whatever it may be — if you keep coming back to those user stories and just keep checking in, you’ll get to the end of the system with something that’s really just put people first and that’s really what accessibility is all about to my mind. It’s just a different aspect of who people are and how they do stuff and how we can create technologies that support them.

**Jorge:** I have not used a screen reader myself, but in imagining what the experience of using the web might be like through a screen reader, I would assume that things like navigation menus, the system reads them to you in the order in which options appear in the menu. Is that true?

**Léonie:** Mostly, yes. What actually determines the order that a screen reader will tell me about things in is the order they appear in the code. Now, when you’re coding a menu, most people will put one menu item straight after another. So yes, to answer your question, that is almost always how it happens. But it’s the order of the code that drives that rather than the menu as a component in its own right.

Screen readers on the web are very, very dependent on the HTML. A little bit of CSS they pay attention to, but really not very much. It is almost all down to the quality of the HTML because every HTML element or most HTML elements have a lot of accessibility information packed in. So, when you use something like table elements, for example, the browser will expose some information to screen readers that says, “this element represents the start of the table.” And inside it, ‘TR’ will tell you it’s a table row, the ‘TD’ is disabled cells and then so on. And headings, lists, list items, all of those different kinds of HTML elements have accessibility information exposed by the browser that tells my screen reader what they are. And it’s that information that my screen reader then tells me so I get to make decisions about how to navigate or to interact with things.

**Jorge:** I would expect that if you are taking care to intentionally design the order in which elements appear, whether they’re in a menu or in a table like you’re saying, if you’re taking care to intentionally design the order in which they are perceived by people who are sighted, for example, then the implication there is that the same level of care needs to go into coding them, perhaps in ways that someone who is sighted is not going to be able to perceive by just looking at the final result, right?

**Keeping presentation and code aligned**

**Léonie:** Yes. I mean, it’s a good idea not to let the visual presentation and the kind of code level stray too far from each other if you can help it. Just because you can never guarantee who’s using what kind of technology. For example, three or four percent of people who use screen readers can see perfectly well. They use them because they have cognitive disabilities, and listening to content is a lot less full of distractions than looking at the web can be. So you have to be a bit careful about making too many assumptions.

But you’re right, yes. You have to give some care and thought to the order content appears for everybody, whether you’re looking at it, tabbing through it with a keyboard and still looking at it, or, like me, listening to it just through speech.

**Jorge:** And that’s the presentation. I’m wondering about the selection of language itself, and I’m thinking in something like the navigation structure for, let’s say, a large website, given that the screen reader is going to be reading to you the options that have been coded in the order that they have been coded, do the words that are used in the labels make any difference? And I’ll tell you where I am imagining that you might run into trouble is if you’re trying to be clever with things like alliteration or using the same word to start each one of the options. Would that represent an obstacle? Or are there other things we need to look out for?

**Léonie:** Alliteration in the same sentence or phrase is absolutely fine. Having a screen reader read it to you or reading it yourself by looking at it really makes no difference. Having a lot of options in the same menu or the same dropdown that start with the same letter, it’s not a problem.

But one of the ways screen readers can quickly move to an item within a combo box, for example, is to use first letter recognition. So if I knew I wanted something that started with an L, I could hit just ‘L’ and it would take me to the first item in the list — or the dropdown — that started with that letter. Obviously, if you have 25 things and they all start with the same letter, you kind of remove that capability. It’s troublesome, but it’s not a showstopper. But I think that’s an extreme example. That’s probably kind of unlikely. If you’ve just got a few things that start with the same letter, I wouldn’t imagine that would be too much trouble for anybody.

**Benefitting all users**

**Jorge:** Right. Well, you mentioned the fact that it’s not just people who can’t see who use screen readers. There’s also people with cognitive disabilities. Or maybe there are other reasons, right? And what this makes me think is that the type of work that goes into making an experience accessible from its inception rather than as something that gets tacked on at the end is something that should bring benefits for everyone.

Because what I think you’re arguing for is somehow clarifying — or amplifying, perhaps — the distinctions between things. Like, when you say, “if you start everything with the same letter, you’re going to make it a bit more inconvenient perhaps to do things like jump to an option based on the first letter of the word,” I would expect that amplifying the distinctions between choices might be something that benefits everybody, not just people who are using screen readers.

**Léonie:** Yes. And if we carry on with that example, there are probably examples that we can think of where that’s the case. I would imagine that someone who maybe has dyslexia or another condition that makes reading actual text difficult, having lots of things that start with the same letter may make options harder to tell apart. Similarly, perhaps, people who have low vision and use magnification to make stuff on screen a lot bigger than it actually is, that too might make their experience a little harder. So yes, I think you’re absolutely right.

You know, we can take that sort of idea to a very logical conclusion. And that’s that disability is not just about people like me who have a recognized disability. It’s actually about all of us. And that phrase gets used an awful lot. But if you stop and break it down and really think about it, it’s actually astonishingly accurate.

So, for example, someone who has a permanent physical disability and can’t use a mouse, that for them is their permanent situation. It’s a permanent disability. But somebody might have broken their arm. And it might be the wrist, for example, that they use to control a mouse. So, for a temporary amount of time, they’ve got exactly the same disability. It’s just going to heal, and after a few weeks, it’ll be fine and they’ll go back to using their mouse. But in the meantime, chances are they going to be using a keyboard or maybe speech recognition to tell their device what to do and how to navigate. So, you have this idea of permanent and then temporary disabilities.

And then you also get situational disabilities. You might be trying to, oh, I don’t know, use your touchscreen device when you’re on the train standing up. So you’re using it one-handed and the train’s bumping around and so your dexterity is really bad. You know, you keep missing the thing you’re trying to tap on.

Or you might be trying to do something when you’ve got grocery bag in one hand, or you’re hanging onto to your kids to stop them running across the road. There’s a whole ton of situations you might find yourself in where actually your ability to use your hands to interact with technology in the ways you usually do, are not available to you.

If you take into account those kind of permanent, temporary, and situational disabilities, thoughtful and accessible design actually really will have an impact on pretty much everybody sooner or later. And when you start to frame it like that, I think you are absolutely right. The point you made really comes into its own.

If we think about things for the people who’ve got permanent disabilities, the knock on effect is that we’re actually going to be thinking about if for people with temporary and situational disabilities too. And if you’re thought all of those people up, that’s pretty much most of us. So, yeah!

**Jorge:** Right. And to that also, our abilities change as we age, right?

**Léonie:** Mm-hmm. Oh, yeah. Yeah.

**Jorge:** So, it is the right thing to do from every perspective.

**Léonie:** Yes, absolutely. I mean, I’m in my forties now — my late forties. And fine, I haven’t been able to see for 20 years or more now, but I’ve lost count of the numbers of friends I’ve got of my age and I can hear them doing it. They’ve got their phones held out at arms length and they’re kind of squinting at them, you know? Trying to see if they haven’t got their glasses on or something they’ve got to do. Yeah. I laugh, but you’re absolutely right, as we get older, our sight gets a little worse, our hearing gets a little worse, our fingers and hands and joints don’t work quite as well. So, yeah.

**Jorge:** I think many of us think of accessibility as applying to constraints around perhaps our sensory abilities, right? Like not being able to see, not hearing as well. You know, people have different abilities when it comes to our senses. But I was really glad to hear you bring up the fact that there are also a range of different cognitive abilities. And you also mentioned, I don’t know if to call them motor abilities like, for example, the ability to move a mouse. And all these are part of what constitutes accessibility and they inform and affect each other, right? Because we know the world through our interactions with the world, so we don’t just see… you know, those of us who can see, don’t just like see a scene before us. Like we, you know, we can also reach out to things and move them and touch them, and all of our senses come into play. Or our sensory abilities coming into play, into helping us kind of understand situations, right? So cognition and sensory abilities and motor abilities are all intertwingled.

**Léonie:** Yep.

**Jorge:** So, making things as accessible as possible, it seems to me, It’s just like a win-win all around, is what it sounds to me.

**It doesn’t have to be perfect**

**Léonie:** Yeah. Oh, it absolutely is. When accessibility works and works well, there’s pretty much nothing to be lost for anybody in doing it except maybe a little more work by the team building or designing the thing. But actually, once you get started, and as your knowledge grows, even that becomes second nature, so you don’t even think about it anymore.

It would take me far longer now to write bad quality inaccessible HTML than it does to write good quality, accessible HTML. And that’s just because I’ve been doing it for so long now, it’s just familiar, second nature. The learning curve seems a bit terrifying when you’re starting out with accessibility. But it’s surprising how quickly you fall into a stride and just make it part of your business as usual.

**Jorge:** Yeah, and I remember reading in one of the… I don’t remember if it was on the TetraLogical website or where, but you made the recommendation to, I think it was to start small or to do one thing.

**Léonie:** Yeah, I think it was at a conference about 10 years ago, I think. I said, “it doesn’t have to be perfect. It’s just got to be a little bit better than yesterday.” And that’s absolutely the idea. Don’t get overwhelmed by thinking you have to figure it all out today; just figure out one thing and then keep doing it. And then tomorrow learn something else and keep doing it.

And bit by bit, you’ll really make progress and it’s astonishing how many people will benefit from just one of those days worth of trying something new and figuring it out, you know? If you just decide, “right. Today I’m going to test all the things I build with a keyboard and make sure, you know, that everything works without a mouse.”

If you can do that and start to fix anything that you identify doesn’t work with the keyboard, you are helping hundreds of thousands — maybe even millions — of people, depending on the product that you work on. But it’s not just sighted keyboard users who have physical disabilities that mean they can’t use a mouse; it’s people like me who use a screen reader, people who use screen magnification because they’re low vision.

Speech recognition tools, actually, although they’re voice driven, actually depend on keyboard accessibility being available for that. So, in just one thing that you could change in your habits, there’s a whole ton of people who right there, are going to find your product a whole lot easier to use. So yeah, if you think of it like that, it becomes less scary and more of a one thing at a time plan.

**Jorge:** Sounds like a great point to end. It just… it is inspiring to hear you talk about it. Where can folks follow up with you to find out more?

**Closing**

**Léonie:** Well, you mentioned our company website, and I’d say specifically our blog. I work with a great team of people and they write far more blog posts there than I do. But there’s some really good foundations pieces there. So if accessibility’s new to you, they’re really well worth reading.

If you’re not familiar with assistive technologies like screen readers, we’ve got a whole series about browsing with different kinds of assistive technology and the keyboard. For me personally, my own website, tink.uk, is where I tend to post on broader range of topics. Mostly technology, but a bit of food and other bits and pieces thrown in.

If you want to chat with me, I can still be found on Twitter, though for reasons that probably won’t surprise anybody, I’m less convinced I want to be there anymore. But I’m @leoniewatson. Otherwise you can find me at front-end.social/@tink on Mastodon. So yeah! Please feel free to get in touch if you’d like to.

**Jorge:** Great. I’ll include links to all of those in the show notes. Léonie, it’s been a fantastic opportunity to talk with you. Thank you so much for sharing with us.

**Léonie:** You’re very welcome. Thank you, Jorge. It’s been a absolute delight. Thank you very much.