Chris Strahl:

Hi, and welcome to the Design Systems podcast. This podcast is about the place where design and development overlap. We talk with experts to get their point of view about trends in design, code and how it relates to the world around us. As always, this podcast is brought to you by Knapsack. Check us out at Knapsack.cloud. If you want to get in touch with the show, ask some questions, or generally tell us what you think, go ahead and tweet us @thedspod. We'd love to hear from you. Hey everybody. Chris here with the Design Systems podcast. Today I'm with Sheryl Cababa. Sheryl has written the book, Closing the Loop Systems: Thinking for Designers, and is also the chief strategy officer at Substantial up in Seattle, Washington. Welcome, really glad to have you.

Sheryl Cababa:

Yeah, thanks so much. I'm really happy to be here.

Chris Strahl:

So tell me a little bit about what you do. Let's get a little bit of background because we haven't had a lot of authors on the podcast yet, at least not people that we're going to talk about the book. So let's get a sense of kind of what you work on, why you wrote this book.

Sheryl Cababa:

Yeah, so I can talk a little bit about just my career in a nutshell. So the first half of my career I spent as a product designer. So I worked for companies like Microsoft, for Phillips Design, kind of doing work in software combined with hardware, and after that I became a design consultant. And so I basically kind of just fell into design, research and strategy as a design consultant. I was initially working for Adaptive Path and then ended up working at Frog and other consultancies before ending up at Substantial where I am now. I think as a design strategist, I became really interested in systems thinking after working with many different kinds of organizations on different types of products and services in different domains and just realize so many things intersect in a way that it felt like sometimes the tools that we have as designers aren't exactly equipped for the kinds of problem spaces that we're dealing with.

Chris Strahl:

Gotcha. I think this is an interesting idea for a book. You've run into these places in your career and elsewhere where either you or others that you've been working with have run up against these kind of limitations around design thinking, around the point of view of what you're designing for. And so systems thinking is crazy broad or can feel crazy broad and it can feel like this really intimidating thing that you have to kind of bite off to be able to get value out of it. I remember one time I was working with a client who was in healthcare and we were talking about some UI design and we started going into the systems thinking conversation. He's like, "Whoa, whoa, whoa, whoa, whoa. We're not going to solve healthcare by changing the way that a patient portal looks." But that's kind of what it feels like you're taking on sometimes and I think that your take on this to try to make this very approachable is interesting. Tell me a little bit more about the reason for writing this.

Sheryl Cababa:

Yeah, so I think what you just gave was a pretty good example. I know a lot of designers who work in spaces like healthcare. I do a lot of work in education and what I find is just that oftentimes we are

working on something specific. You are working on that patient portal and then you realize it's success or failure totally is dependent on just all these other aspects. You have very little control over that go way beyond the end user that you're focused on, which is if you're designing a patient portal, you're thinking about what the patient is going through in that experience. And there's all these other systems at play that get that patient to where they are when they're interacting with this one thing. I think basically in order to be able to make the right decisions about that patient portal, you should really have a lens on everything else that's going on around it and understanding how those things have an impact on what you're designing as well as how what you're designing can have an impact on the system.

So it's one of those things where it's just trying to see where things intersect, trying to see what causes one thing to happen to another, and then also just, I don't know, expanding your lens on what the system is within which your area of focus sits. And I think that's really helpful lens for designers to have, especially as we're designing things at scale, we're designing things that have great deals of complexity because there's lots of infrastructure in place. I love that you used a healthcare example because I was doing work for a huge pharmaceutical company and that was sort of how I nacently started thinking about "There's got to be some other methods here that we can use to analyze the space because there's so much happening here that this one thing I'm designing is just like I know there's other things that are going to affect whether this works or not."

Chris Strahl:

Yeah. And I think this is the best part about the book is there's so much of current events of obviously your own personal voice in it. And I think that's really brilliant. I found myself drawn in by the examples that you have and particularly the ones in the Pacific Northwest. "e both live in the Pacific Northwest and so there's lots of things that I was like, "Oh yeah, I remember that." Like you talk about the heat wave in Portland and then lots of stuff. It's the first book that I've read that's been on the subject that's been near the end of or post COVID. And so thinking about all of the examples that we now draw from this pandemic that really truly globally affected everybody. So I love the infusion of these ideas of real world in the past five years, where you've seen systems at play.

And I think that really helps you describe this framework that you're kind of evaluating design decision making around how it pertains to design systems is it starts with this idea of what are we talking about here? Are we talking about hard systems or are we talking about soft systems? Hard systems, by my understanding being things like design systems where there's this fairly structured intentional idea of what this system is intended to accomplish and there's these soft systems which are more the philosophical point of view or way of thinking associated with this. Can you dive into that a little bit more and help me flesh that out around when you think about a design system and how that relates to systems thinking? What are we really talking about?

Sheryl Cababa:

Yeah, so I love that you brought up soft systems and hard systems. One thing that I wish I had written about because I think it's such a good metaphor for this distinction between soft systems and hard systems is Karl Popper, the philosopher, had this framework that he called cloud problems versus clock problems. And if we think about clock problems, those are most of what we think of as engineering problem solving. So he describes the clock because what you're trying to do is make the clock work so you have a goal in mind and your problem solving is oriented towards how do we piece together and puzzle together, how to make that specific thing, do what it needs to do. And then on the other end of the spectrum, there are these cloud problems and they're really ambiguous.

There's this concept called what multi finality in systems syncing, there are many different ways to solve a problem. There are oftentimes what we might refer to as wicked problems, which some people know that term from Horace Trigger in the 1970s coined it to talk about complex problems that have many possible solutions and no singular thing can fix it.

And so I think soft systems thinking is in that cloud space. And that's a lot of what my book is concerned with is this idea of expanding what you think of as your problem space and what you think of as potential "solutions." I try not to use the word solutions so much in this space anymore. I try to say approaches or interventions or your navigating problems rather than problem solving because there's so many different ways that you can create change and create impact. So I think that in many ways is a distinction. And one of the problems in design and also software engineering is sometimes we are actually thinking of things as clock problems, but we're actually dealing kind of with cloud problems. And so just kind of acknowledging that that's part of what we're doing is I think important in the field.

Chris Strahl:

How buttons solve healthcare.

Sheryl Cababa:

Yeah. Just design the right button.

Chris Strahl:

Right. All our healthcare [inaudible 00:08:21] as a country go away. Is another thing that I really loved about the narrative in the book is not only did the examples provide really concrete ways of thinking about these systems concepts, but you also infused it with a lot of relevance around how things like power structures and who we are influences our systems thinking. And I think that was an interesting take that I hadn't seen as much before. Of course in modern context, in modern dialogue, especially in technology, you can't escape the idea of how our power systems and biases really affecting our way of thinking and the work that we create.

I just think that put succinctly into this idea of the closer you are to a center of power, a locus of power, the harder it is for you to see outside of that. And I think that the presence of that in the book as a concept that influences our systems' thinking, I thought that was really apt. And then moreover, the ability to relate it to things that are really present and affecting people's lives, like George Floyd and the idea of how things like systematic racism and systematic sexism. We oftentimes understand that those are terms that we use that represent oppression, but don't necessarily think about the systems that those things create. I thought that was a really interesting kind of angle for this and it definitely grounded it in a lot of personality and a lot of real practical ideas of how these affect people's lives.

Sheryl Cababa:

Yeah, it's really interesting because I definitely think of systems thinking as needing to stem from a mindset shift. So I think one of the reasons that within the book you see a lot of personal stories for me as a practitioner, but also just these perspectives. Like I have this constant, in each chapter there's something called system spotting. Essentially the idea is that once you kind of have this mindset shift that's oriented towards system thinking you're able to see systems where you didn't see them before. It's kind of making the invisible visible. And yeah, I think there's also an alignment just in terms of the last few years. I think there's been a collective mindset shift, especially with the pandemic, with the

acknowledgement of systemic racism. And these are kinds of things that people haven't thought of as necessarily interconnected as much as they currently do now based on the current time that we're in.

Chris Strahl:

Yeah, so thinking about one of these that was in the book talking about changes in temperatures in [inaudible 00:10:49] environments and the idea of how much green space exists and how green space is highly correlated to people's socioeconomic environment and to a degree the racial makeup of neighborhoods. I thought this was really interesting and how that related to things like redlining and practices that were really present in the cities that we live in the 1960s, '70s and '80s. I'd love to have you take us through that story and present that sort of systems point of view.

Sheryl Cababa:

Yeah, definitely. So anyone who lives in an urban environment has probably noticed that some neighborhoods have more trees than others. And I think me personally, if you had asked me several years ago, I wouldn't have necessarily thought of that as an example of certain types of discriminatory systems at play. But in a city like Seattle or I think the example that I primarily drew from was from LA as well as from Portland, is that neighborhoods and cities that have residents who fall into lower socioeconomic status, who fall into black and brown racial categories tend to have less trees or fewer trees. And I think there's a few reasons for that. One is that in LA specifically, and I'm sure this holds true for other cities as well, the government systematically was removing trees from certain neighborhoods for surveillance reasons. So the idea that they can more easily surveil certain populations for criminal activity from helicopters or from a sky view.

And then on top of that, there's just more private resources to plant and maintain trees as well as to hold property in other neighborhoods. I had a picture in the book of Los Felice and how many more trees there are in that neighborhood than in others. And we saw sort of the result of that with, for example, the heat wave that you talked about in Portland. Some neighborhoods were basically 20 degrees hotter Fahrenheit than other neighborhoods because of their lack of trees. And so you could do a whole series of causal loops, you could actually create a systems map that points to why there are more trees in certain neighborhoods than others.

Chris Strahl:

Yeah, you brought up Lents, which is a part of Portland that is traditionally had serious struggles with redlining. It's a place where gentrification is happening at a really rapid rate. And it's interesting to see a place that has traditionally been the home of black and brown people and folks that have not had the same socioeconomic advancement as other parts of the city fundamentally suffer more from climate change because of those systematic implications of that. And it's a fascinating kind of take on the idea of systems and how they're a part of our everyday lives.

Sheryl Cababa:

Yeah. And I also think it's really interesting if you put yourself in the shoes of, okay, now let's like say we did a systems analysis of how it exists today and what kind of led to that. And if you think about, okay, well how do you solve for this? There are many different potential interventions, right? It's not just, "Okay, well obviously the government needs to plant more trees in that area." I think there's also issues of gentrification. There's also issues of infrastructure within those neighborhoods, and there's issues of why are cities so racially segregated to begin with, and that people of certain socioeconomic status and

racial backgrounds are concentrated in these very specific places. And so you can think about many different ways of potentially solving for making change essentially. Again, it's like, it's hard to say problem solving. It's just like how do you create change that would maybe result in more equitable outcomes?

Chris Strahl:

Yeah, certainly. And I think that that's thematically interesting in the book too, because like you said, you have this, I don't know, aversion to the idea of calling it solutions maybe is the right way to frame it. Because a part of it and a part of the system's thinking is making the assessment of whether or not the thing you did was on the whole beneficial or if it did nothing or if it created some consequence that you hadn't foreseen. And I really do love the idea of systems thinking doesn't really stop with implementation. There's a lot more that goes on that creates, like you said, these loops back to a similar decision point kind of recursively with the idea that hopefully that creates a virtuous system that makes more meaningful change.

Sheryl Cababa:

Yeah. I think it's worth acknowledging, and the reason that I don't describing things as solutions is because Peter Senge, who wrote The Fifth Discipline, I'm paraphrasing here, but he said one of his principles was today's problems were yesterday's solutions. So is the idea that these things are cyclical we're never solving, and then just dropping it there and saying, "Okay, well that solved it. We can leave that alone."

It's probably going to create not just other problems, but other problems in other parts of the system. There are ways that you might need to mitigate things that you did not foresee such as unintended consequences. And yeah, the idea that this is sort of cyclical thinking is really important to the notion of systems thinking. It's funny because a lot of our tools in design are linear. Every time we create a user journey that's kind of a linear thing. We create these personas, they're at a static point in time and it's hard to think of how things shift and change for those personas. And I think some of the tools and math and systems thinking are a little bit of an antidote to that in terms of you thinking about how you might affect other things and going beyond just things like the direct benefit of use of a product.

Chris Strahl:

It's interesting. It's like why the term artifact for a design creation is it is something that exists at that point in time that represents that solution in that moment. Other people talk about it as it's your brain and a jar when you have a consulting deliverable that is related to design or something like that. And this starts to then apply very much to the design systems side of things. So again, that sort of transition from soft systems to harder systems, but I do feel like there's a lot of soft systems thinking that makes a great design system. And you have a whole chapter in the book about design thinking, some of the great parts about it, some of the more problematic parts about it. But the one thing I wanted to focus on for a minute, and I know this isn't your take, it's Nicole Sarsfield, that is in here that talks about the goal of a design system being efficiency.

And I actually really don't believe that's totally true. I think that that is one of the outcomes of a design system. But as you're going through the creation of the design system, one of the things that I like to think about as doing it the right way or the better way, is to think about what are the ways that you can make a design system a gathering point for a lot of systems thinking that exists outside of that design system. And that occurs with things like inclusion of principles, that includes with talking about audiences and users and behaviors and talk about consequences, dos and don'ts and example

expressions where a design system was used well and places where it wasn't used as well. And this also relates to metrics and other data we try to gather when we create these systems that understands their effectiveness.

But my point with this is saying a design system feels like still an implementation of systems thinking and done. It has an eye towards the broader systems idea. So I guess if I'm saying when you're creating a design system, a starting point for that is zoomed way, way, way out. And it's in this more philosophical idea of why am I creating this in the first place and what is the real problem I'm trying to solve with the design system? Because so many people just start with this idea of, "Well, I got a bunch of components and I have to organize them." But that's not really what people are trying to fundamentally achieve with a lot of these things. People are fundamentally trying to build better products faster. And that has a whole lot of implications throughout the organization that go way beyond the design system. And I would love to get your take on that idea specifically.

Sheryl Cababa:

Well, I totally agree with you that there's this zoom out level where systems thinking can have impact on how you're designing something like a design system. To think about it in that clouds and clock kind of way. You're thinking about how those cloud problems are going to intersect with this clock that you're building. I don't know what that looks like, but you're building this clock. The clock is the design system, but you need to take into consideration this sort of cloud of issues that could hover around it. And that's like how does your organization adopt what you're doing? What kinds of organizational culture things kind of manifest and the kinds of decisions you make about the design system as well as what will make it successful? What will stymie at success is not for nothing that systems thinking for decades now has been intertwined and associated with organizational change management because it's like this is a complex space because it involves human behaviors and how humans behave in groups, and that is a cloud problem.

And I think using systems thinking to kind of inform how you can make decisions, the philosophy of what you're building as you were saying, are ways that it can influence how you put your design system together, the decisions that you make. I remember working for one client in healthcare and there was this designer on their internal design team, and he was just off in the wilderness somewhere. I think he was working remotely and he was not working on these features and things that these other designers were working on. He was working on the design system by himself in this weird little silo.

Chris Strahl:

All the best systems work happens in the woods. It always happens in the woods.

Sheryl Cababa:

He was like the Bon Iver of this company just writing a whole album in the woods. Yeah, that might work for Bon Iver, but it was not working for this. It was not working for this design team.

Chris Strahl:

That's hilarious.

Sheryl Cababa:

And then the idea was he was going to kind of drop it onto this organization and be like, "Here's your design system." And I was kind of like, "Wow, that is truly bonkers." I can't imagine anything happening with that aside from it just collecting dust or people forgetting about or just failing because it wasn't taking in consideration the myriad of products that this company works on, much less the different organizations that would have to touch this design system. So I think there is something around, I don't know what it is, it's not just thing you're designing when you're engaging in systems thinking, it's also that meta level of how does your organization work with the thing that you're designing, whether it's a product or service or design system.

Chris Strahl:

It always brings me back to Jina Anne's take, the design systems are for people. And I think that designing for the people that use and consume and ultimately experience those design systems, all those different stakeholders are so relevant to that process. And if you simply think of it as clockwork, very often that design system is ineffective or unusable. And so I think that it is really cool to have this conversation around, yes, this is a clockwork thing, but it's out there to try to help and be involved in a cloud problem. And that relationship between thinking about systems and then designing systems that ultimately are used in organizations to ship product. It's a really great thought area for us to be all much more aware of. And speaking to that awareness, we see this all the time in our customers and in the people we interact with later.

You see somebody that they have a way of working that they've probably done for a while that they probably haven't really changed very much or thought about how systems impacts that. And it's oftentimes a struggle to get to have those people think about that abstract systems because look, as humans, we're not really great with abstraction. We're not super great with understanding our connection to the whole. What is your advice for taking somebody that is maybe not even resistant, but maybe just unaware of how their work relates to the broader system and helping them sort of see that?

Sheryl Cababa:

Yeah, I appreciate your observation that we're kind of bad with abstraction. I think specifically in the design discipline too, we're really bad with abstraction. And maybe that's actually on the other side of the coin as superpower, because designers are both trained and fundamentally seem to come with this empathic lens that they use to focus on the humanistic side of design of creating experiences. Whereas systems thinking is really an abstraction of forces of cause and effect, and it really lives in this abstract territory of creating causal loop maps and things like that. And I think that often feels like there's a friction there because you know, want to think about the humanistic side of things. And I purposely kind of try to intersect the design practice and thinking about your stakeholders and how there is a type of systems thinking that is oriented around extending who your stakeholders are, whether it's different types of populations you might be designing for that you didn't think about, or it's just literally a broader set of stakeholders within your organization and outside of your organization.

Thinking about policymakers, again, if you work in healthcare, you probably should be engaging policymakers in your work as a designer just to understand their perspective and how their work affects what you're doing, as well as just other organizations. There's regulatory environments and there's other kind of healthcare organizations that you might engage. And so I still think coming from the orientation around people, whether it's types of stakeholders, groups that you might engage in, it's a good starting point for designers before moving on to how forces interact with each other within you trying to build an understanding of the system.

So I think there's that nice, you can maintain that humanistic lens while still broadening your lens outward in one, expanding your thinking to other humans aside from just the narrow set that you've been thinking where your stakeholders all along as well as thinking about, okay, now how do these things happen at scale in terms of human behaviors and how they become forces in the system. And also thinking about things like incentives. That sort of intersection I think is a good starting point for people who are like, "I'm really uncomfortable with the abstraction piece when it comes to systems syncing."

Chris Strahl:

And there's a lot of mindfulness there. And hey, look, mindfulness is one of the core values of the startup that I helped found. And so I get this idea of thinking beyond oneself and one's immediate group into how the work that you're doing impacts others. And I think that there's a lot of people that can subscribe to that, especially as that sort of zeitgeist percolates around the world. Mindfulness is a big topic in mental health and healthcare and all sorts of other places, and people are trying to find more and more ways to apply it. And I think that this is an interesting, if somewhat unexpected for me anyway, application of it. Speaking about unexpected things, how has writing this book and working in systems design helped you be more open to different ideas or different practices as a designer?

Sheryl Cababa:

I feel like my practice just over the past six years or so has really experienced a shift where I feel like I've stopped being a designer who designs kind of things. And now I'm a designer whose primary role is facilitation, facilitating other people's expertise, and I don't know, creating alignment and outputs that hopefully lead to certain outcomes. And so I think one, it's humbling, especially working in a space like education primarily is I feel like I've so little domain expertise, even though for the last five years I've been doing primarily education projects and I have to rely really heavily on subject matter experts and also lived experts who are within the system. So whether it's teachers and students who we would typically think of as end users and end beneficiaries, or whether it's people who are administrators in school systems as well as one of the things that I do a lot of in my project work is always engaging academic researchers who are experts in a certain space because they have so much to say about the system and how it works.

And I've never met a researcher who doesn't want to talk about what they're doing, what they've been focused on. So they're really happy to engage, especially in a space that's really oriented around thinking about how to navigate problem spaces and what can be thought of as potential solutions. So I think my practice has really kind of shifted towards that orientation of understanding that as a designer, I'm not ever going to be creating an output by myself or just with a team of other designers. I need a multidisciplinary, cross-disciplinary team of stakeholders that will help me engage in trying to understand the system as well as going into ideating and problem solving when it comes to those systems. So yeah, I think there's been this traditional lens on designers as being able to be agnostic to problem spaces and being agnostic to who they are, and they can just drop in from outer space and solve problems for anybody.

This is the traditional ideal lens on things, which is like, "Yeah, you just need to use design thinking. You can empathize by doing a little bit of design research and then you ideate a million ideas and then you narrow it to five and then you prototype those things." And I think I've just... I don't know. That's such a simplified way of looking at the world that you have to acknowledge where you're coming from and then that you also hold inherent powers as a designer. You're like, you're really close to problem solving power.

Chris Strahl:

You can do a lot more than your constituency might ever be able to do.

Sheryl Cababa:

Yeah, that's right. And so I don't know. I think it's interesting because my practice at Substantial is really oriented around equity center design. And so really kind of thinking about how to use design as a tool to disrupt and distribute power and help things become more equitable in the spaces in which we work. And that means distributing power to those who we might think of as research participants, the communities that we're engaging with in order to do this work. And I think that as well as a form of systems thinking in that we're trying to keep the broader outcomes that we want from the design process in mind as we're using design as a tool to kind of shift power imbalances.

Chris Strahl:

It's really interesting the idea that the application of design is itself its own power system. So again, I think that some of this can often feel really intimidating when you first approach it, other than reading about it, learning about it, checking out the book, what is it that people can do to feel like they can put one foot forward here?

Sheryl Cababa:

One of my objectives with the book or principles when I was writing is like, I want somebody to be able to take some of these tools and just bring it into their work tomorrow. Stepping back for a second, Donella Meadows wrote Thinking in Systems, which is a foundational text in systems thinking. And I remember reading that several years ago and going, "Oh man, this is really mind blowing and I love these ideas." And then I just kind of didn't do anything about that. I couldn't do anything with that.

Chris Strahl:

Great. Now what?

Sheryl Cababa:

Yeah, now what. So just went back to creating user journeys or whatever I was doing, and then eventually I did a casual loop diagram for one of my projects and I was like, "Okay, I think there are ways that I can kind of integrate this in my work in a way that fits in with the design practice and doesn't necessarily have to replace it." So I have some of those tools. One of them, for example, is the iceberg diagram. So everyone's basically seen a version of this before where it's like there's the part above the surface and then underneath it are patterns, and then there's infrastructure, and then there's mental models at the very bottom. And you can kind of use that to analyze just about anything. It could be how is your organization coping with remote work? I actually did that with a client organization at one point, and it was really interesting.

Chris Strahl:

Well, that actually, that's a really interesting idea, the idea of, okay, so how has remote work changed everything for us?

Sheryl Cababa:

Yeah.

Chris Strahl:

I think I saw a meme on Reddit about that today, oddly enough.

Sheryl Cababa:

Really?

Chris Strahl:

Yeah, that had an iceberg style to it. Maybe you made that. Who knows?

Sheryl Cababa:

I did not, but maybe one of my clients did. I don't know. But yeah, it's a really good starting point for thinking about, "Well, where can we be intentional about what we want to change?" Because the point of the iceberg diagram is to get at root cause. So oftentimes we're solving for things that are symptoms, right? Like "Oh, I don't know. People are just not coming into work on Tuesdays and Thursdays like they're supposed to. We told them to do that." Okay, well, why don't we just provide lunch? That's not thinking about the root cause and how to actually improve things. That's a bandaid solution. And so it just allows you to think more creatively about where you can intervene. And that's one of the things that I push with systems thinking.

If designers are kind of like, "I don't know, I'm just in my lane and my management doesn't allow me to think more broadly. We're not allowed to think about the business model and stuff like that," but this kind of analysis, it actually helps with innovation. It helps with getting creative about where the problems lie and also where potential interventions or problem solving lies. And so even if you're working on just what you think of as just a product that might help you think about, "Oh, that healthcare portal, we might need to think about how communication happens between two different hospital systems," and that suddenly becomes an opportunity. So I think there are ways you can integrate it into your work. Just kind of thinking creatively about where this analysis could help you.

Chris Strahl:

Cheryl, thank you so much for being here. Like I said, it's a little bit of a change of pace talking about the book. We'll make sure we put a link to the book in the show notes so those of you that are interested can check it out. Really appreciate you being on here and kind of taking us from clouds to clockwork. I really appreciate it.

Sheryl Cababa:

Yeah, absolutely. That isn't in the book, by the way, but you can now use it as a framing device for when you do read the book.

Chris Strahl:

There we go. Well, thank you again. It is been a pleasure having you. This has been the Design System podcast. I'm Chris Strahl. Have a great day, everybody. That's all for today. This has been another episode of the Design Systems podcast. Thanks for listening. If you have any questions or a topic you'd like to know more about, find us on Twitter at the DS pod. We'd love to hear from you with show ideas,

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