

Andrea Goulet

Welcome to legacy code rocks, the podcast that explores the world of modernizing existing software applications. I'm your host, Andrea Goulet. And I'm here with my co-host and my business partner, Scott Ford. And together, we're out to change the way you think about legacy code.

Scott Ford

If you're like a lot of people, when you hear the phrase legacy code, it conjures up images of big mainframes and archaic punch card machines. While it's true, it only tells a small part of the story. The truth is, anything that someone else has left behind is their legacy.

Andrea Goulet

And today on the podcast, we have someone who is very near and dear to my heart is Indi Young. Indie is a speaker, writer and UX researcher, and she empowers makers and vendors to know their problem space and create inspired product designs through empathy and deep understanding of people's purposes and variety of approaches. And she's the author of two books, Mental Models and Practical Empathy. And she's spoken at over 40 conferences across the globe. Her online courses training and personal coaching, bring empathy to the designer and developers table, bringing knowledge of users' needs that go way beyond the data. And you can follow her on Twitter Indi Young and then also check out her website, at indiyoung.com. And I would also before we dive into the conversation, I would just like to say that I have learned so, so much from Indi it's almost it's hard to say just how pivotal her work has been to my own practice. And over the past couple of years she's also become a very, very dear friend too so Indi I'm so happy you're on the show. Finally.

Indi Young

Thank you both. I want to send thanks back to Andrea too, because without her I would not have my [online courses](#).

Andrea Goulet

Just like, get this stuff online. You're so good. Well, awesome. Well, this is about you today. So the first place that we love to start is with an origin story. So tell us a little bit about yourself. And then how you found yourself really interested in this problem space of mental models and empathy and getting people to listen deeply so that they can develop better software.

Indi Young

Yeah, actually, what Scott said just in the intro, totally took me back to this room: it was my first job out of college. I had gotten my degree in computer science, and I was with a team of fresh graduates; there were probably 14 of us. And we had some legacy code. It was FORTRAN.

Andrea Goulet

Yeah.

Scott Ford

Nice. Nice.

Indi Young

Yeah, I can't even remember what we were trying to update it to. But, we were in this giant complex of buildings, and there was a lecture theater in there. We got to set up

our PCs in that theater so we could work together on this project. There were cords and stuff running across the floor, and we got to play whatever music we wanted to on the booming sound system. So we'd bring mixtapes for each other, and we'd listen to this while we were all coding away, asking each other questions, and trying to untangle the spaghetti code. That was a great little jump back into the past because that team building. And it was really pivotal to me. I was like, "Oh look, we got hired on together with all of these other people. We together are an entity." And we learned each other and we made relationships and we had fights and we dissed each other and we worshipped each other and all of those things that happen. And that was a really great platform for me to begin my career, because after that we started writing software for regular people, as opposed to writing software for other engineers and scientists. So there wasn't an SOP or standard process that you went and put into the algorithm. There were people out there.

Andrea Goulet

Yeah.

Indi Young

People had different ways of doing things. So that was my big switch was like, "Okay, I got to know the team. Now I've got to get to know these people that I'm trying to build for because they're going to be just as varied as the team. I can't just slap some solution out there and call it good just because I read it in some book somewhere."

Andrea Goulet

Yeah. And I know from our conversations over the years, one of the things that really sticks with me is you push people to never call people users.

Indi Young

There is a place to call them users, or any other noun that has to do with describing a person who has a relationship to your organization. And whatever your organization is producing, if it's producing digital stuff, if it's producing algorithms, if it's producing services, all tied in with that there are the people that know you. They may know you as a potential vendor that they're going to do business with, they may know you because they already use some of your services. They may know you because they curse you all day long. But that is a special relationship, and that relationship is what is defined by the solution space. So if you think about the solution space and the problem space, the solution space is where you come up with something to help to make it better for users, for passengers, for members, for patrons, for whatever you want to call that group of people for whom you're trying to make the world a better place. The problem space though, that's where I use the word person.

Andrea Goulet

Yeah.

Indi Young

In the problem space, what we're trying to understand is not somebody who knows about us and our services, but somebody who's trying to get something done. They have a purpose in mind, they're trying to achieve it ... big, small, different levels of granularity. At that point, they're just a human and I'm there to witness the way that they get their purpose achieved. All your circles and work-arounds, and indecision, and being angry with yourself, and emotion, and distrust of what somebody told you or a particular vendor saying to you ... and guiding principles, too, that help you make decisions. (Our

guiding principles are our operating systems internally. They can be derived from our values. They can be derived from our superstitions. They could be derived from our favorite character on Star Trek.) So that inner voice, the emotional reactions, and the guiding principles are the key to understanding how someone achieves their purpose. And those are the three things that are central to what I do in my work.

Andrea Goulet

I think why your work has really stood out among- there's a lot of people who are in this empathy space, right? And I think the thing that makes you really special is that you are breaking this down into very, very, very tactical and analytical ways. So it's not just, "Have more empathy. Empathy is great." It's, okay, empathy is necessary, we get that, and here is 10,000 hours worth of content to help you understand exactly in your situation, how to apply this. I remember I was on a plane out to Portland; I was going to speak at a conference. Empathy has always been something that I understand, coming from the marketing world. How do I bring this thing that I know over to software developers? So I was doing all this research, and I read your book, Practical Empathy. And there were two things that really stood out: one, this is a technical manual for how to apply empathy in your work. And two, I was getting pushback on, "Well, empathy is not really a deep topic," because people perceive it as just, "Oh, it's that thing." And you broke it out into six different subtypes of empathy. I was like, "Okay, anything that can be distilled into six different subtypes is incredibly technical. I need to know this person."

Indi Young

Yay! And then you reached out and here we are. Yeah, empathy is really misunderstood. People think it is an emotion, or it is feeling someone else's emotion. Feeling someone else's emotion is actually called emotional contagion. I didn't know what empathy was either. When I went to research that book, I went out into the psychology world, the counseling world, what is empathy to them? They don't have arguments about the definition of empathy. They're like, yeah, bring it on. We got 12 definitions of different empathies.

Scott Ford

Oh nice, okay.

Indi Young

Yeah, they don't have to argue about it. Whereas in the business world, for some reason, empathy is just like, "Be a better person."

Andrea Goulet

Right.

Indi Young

With a little finger shake, right?

Andrea Goulet

Yeah.

Indi Young

And it's like, no, no, that's not what it is. The types of empathy that I write about are specifically cognitive empathy, which is consciously trying to understand, "What's the OS for this other person." Right? Everybody's got their own guiding principles. Everybody's got their own inner voice and their own emotional reactions that have history. The other type is called empathic listening.

When people talk about empathy, they like to draw a little heart. It's all emotional and everything, and I'm like, "No, no, no, if you're going to pick a body part, to represent empathy, let it be the ear, because listening is what's key."

Scott Ford

I like that.

Indi Young

If you are not able to use your ears to hear, you use your eyes to hear people, when you interact with them, when you look at sign language and things, so I shouldn't be picking on a body part. But it really is about paying attention and listening, and letting that other person change the way you think. Which requires a little bit of humility. So back in the beginning, I'm trying to get an understanding of these people that we want to support and share that the rest of my development team: the people who are creating the database, the people who are writing the code, the people who are going to write the front end of it. So I wrote a state machine of how different people have their inner thinking and run their guiding principles.

Scott Ford

Nice.

Indi Young

Yeah, that was the only tool I had at that point. And so this is how I worked for about six or seven years, until I turned it into the Mental Model Diagram. It had a more diagrammatic effect. But the idea is to be able to take an underlying understanding of how a person thinks, and another person thinks, and like 10 more people, and see what the patterns are. See how those patterns grow together, grow them from the bottom up, which is another Computer Science principle. You know, you want an emergent system, you don't want to put your own bias on it. Like, "Oh, this is how we do it in this discipline. And so this is how you should think." You don't want to do it that way. You want to let it grow from the bottom up, because a human has a history. And each human's history is different, yet there are patterns between them. And so the mental model diagram shows those patterns. And you can map what your organization does to support those patterns and force yourself to grade your own services by how well they help somebody achieve their purpose. I have seen so many wide open eyes when we do that exercise. I call it gap analysis or strength weakness measurement. It's like, "Oh, yeah, now that we're looking at it from the point of view of what a person is trying to get done, we are only supporting one thinking style, or we are really awful in this one area. And we've obviously only concentrated on this one section of it. So we've ignored parts of it or even ignored whole sets of people."

These are called externalities. There's a great book called Future Ethics by Cennydd Bowles, where he describes what externalities are, and also what unintended consequences are. Unintended outcomes are people that you think you're designing something to make the world a better place for them. But, they use it differently ... not how you expected. And I mean, this is writ large is how we describe Facebook.

Scott Ford

Yeah, that's the example I just had in my head. The use and then abuse of social media. Yeah, that's fascinating.

Andrea Goulet

Yeah. And I think this is why, because the thing that I love to do is empower people who

have been told their whole life that they're not good with people. Like Scott is one of these people. "I've been told my whole life, I'm not good with people." And that-that's a lie. Right? That is a lie. And I think it's the flip side of "I can't code." Like, "I'm bad at math." Right? So we kind of have these different buckets.

Scott Ford

Limiting beliefs.

Andrea Goulet

Society tells us, and people have directly told us too, so we start to believe these narratives. And when I point people to your work and start to describe as an analytical way-I present it to engineers that it's about collecting data, and then solving problems. And so I say, "It's proactive perspective taking and problem solving." This is what you're naturally really, really good at.

Indi Young

And guess what, there's a specific way of writing this stuff. There's a syntax to it, which comes from roots in computer science. It is basically taking parts of a psychological discipline, but writing it the way that I know how, to make things more concrete, with an eye toward being able to use this with folks on a team who are trying to create something to make it easier for someone else.

Andrea Goulet

Yeah.

Scott Ford

I'm also hearing lots of really precise language and lots of intentionality around terms. You were talking earlier about the solution space and the problem space, and that recognizes the label that's used for a human in one context, should perhaps be different than the label use for a human in a different context. And I really like that. I feel like names are really powerful and giving names to things is a great way to facilitate communications. One of the reasons why I like patterns in software so much is because I feel like they give us names to these abstract concepts that are difficult to talk about unless we give them a name. I can see empathy benefiting from that naming as well, because it's just as easy to touch as a software system is right like some of these concepts, right? It's very difficult, it's ethereal, it's cerebral. I can't touch Andrea's mental state, right? I have to infer her mental state, very much in the way that I have to infer the computer's working state when I'm writing software. I have to build my own mental model for what's actually going on in the machine. And the mental model that I'm building for what's going on the machine isn't actually what's going on the machine, but it's probably close enough for me to get my work done. And so I can see these tools for empathy being really helpful and like me building a mental model of what's going on and another human's brain so that I can you build up better relationships.

Indi Young

Yeah, that's a really good analogy for it. Another analogy is a little closer to debugging because what's coming out of Andrea is like those stop points in code, right? She's communicating something about her inner workings, you can recognize what's coming out of her mouth

So I teach people how to recognize when a sentence that somebody says is at the surface or is at depth. Surface is an explanation how, or a preference, or an opinion, or a command, or a direction. There's a list of these. William Miller wrote a really good,

slim book that has a list of all the ways that we communicate with one another without listening, because we're saying things such as I'm judging you, or I'm advising you, or maybe I'm commiserating with you, or I'm praising you, or I'm taking you down, or I'm teasing you. Yeah, all the words that come out of your mouth can be classified.

I teach people how to classify it. At depth there's the inner reasoning, there's the emotional reactions, and there are the guiding principles.

I just did this with a large corporation, where I took a script between two of their team members that represented what generally would happen. Product manager: "Oh, you know, guess what? The developers who were going to do X and such, when they got into the details, realized they couldn't do it. And so I came up with a workaround. So here's my workaround. And can you please lay this out nicely so that we can implement it?" Designer: "Hey, hang on a minute. This is what we had agreed upon, why the change?" The product manager doesn't tell the Designer up front that Developers said, "Oh, we got in the middle of it realize we can't do it this way." So there's a back and forth and all that back and forth is at the surface: explain, explain, and then there are a bunch of little spears thrown at each other in terms of commands. The commands were dressed up with some politeness in front, "Can you give me these blah, blah, blah?" At the very middle of the script we saw each person put their guiding principle up like shields.

I reworked that whole conversation so that those guiding principles are the first things that we discover about each other. And we say, "Oh, your guiding principle is to not let this thing slip deadline." Right, and the other person's like, "Oh, your guiding principle is to make sure that we follow what we've learned from research. We don't make the same mistake twice." So now let's explore some possibilities that we can do together because we're both on the same team and we want to ship something. So what can we ship? Maybe it isn't what we wanted to ship this time around. Maybe we wait until the next round.

The people in the class were in applause at the end, because just being able to recognize what is coming out of somebody's mouth is powerful. They were like, "Oh, my gosh, that's what we're saying to one another? I see why it's not working." [laughter]

Scott Ford

And I imagine stopping to pause in that moment, and recognize what you're saying or what someone else is saying, is not easy.

Indi Young

No.

Andrea Goulet

You're refactoring. That's what you're doing: you're refactoring people's conversations and habits of how they interact with each other, and saying, "Okay, let's pause. Let's look at this, what's really going on, let's extract some things out, make sure that we're clear." And I think you probably have the same challenge where it's like, when people see the benefit, they're like, "Oh my gosh, let's do this more." But getting them to buy into that first little bit, it's like, "Whoa, whoa, whoa, we don't have time to sit down and analyze how we're talking to each other. We just need to go fast."

Indi Young

This is the thing: at the end of that workshop, I said, "Okay, there is no key where you unlock a door and you walk through it. It is a long term thing where you're building

relationships, you're building your own awareness, and you're building your willingness to be curious about somebody that you haven't been able to work with very well in the past." Never eat lunch alone. You take those little times, you have all these little times, it doesn't have to be lunch, right? It can be coffee. Don't do it alone. Do it with somebody at work, and get to know them.

Learn how to listen. Once they hear you paying intense attention to them, they feel heard. That is like the biggest gift you can ever give somebody. Feeling heard is the key bit. (Unless you're talking to a narcissist.) "You've heard what I had to say. I feel heard." That's the key upon which relationship-building works: as they go through weeks or months of feeling heard from you, they will start to give you that same gift and hear you. And this is how we build a relationship at work-with people that we may not like want to hang out with in our real lives. [laughter]

Andrea Goulet

Well I think that's in any context too because, like in a marriage. It's in friendships and, you know, professional relationships, all of that.

Scott Ford

With my kids. [laughter]

Andrea Goulet

It also makes me think about how the lie that you were told, Scott, that you are bad with people, is so not true because you are one of the best listeners that I know. You do this. And I think there's an extrovert bias. And so people feel like "good with people" means I have a lot of salesmanship or "I have a lot of charisma" or all of those different things. And I agree I think, it makes me think of Susan Cain's work, her book Quiet, and just the power of introversion in extrovert's world. And as an extrovert, right, I think there is so much power in listening, and that that is the key to human connection, even though that's not what necessarily society has told you.

Scott Ford

You're the second person I've heard mention they don't eat lunch alone this week. So can you dig into that a little bit more?

Indi Young

Sometimes you have to say something that sounds really, like, out there, to make people pause to consider it.

So there's another type of empathy that's called "Empathic Listening." Empathic Listening has four parts to it. The first part is recognizing that there is another person in your sphere that is having something going on for them. You recognize that. (Some of us aren't good at recognizing that.) The second step is to remind yourself what they are feeling is real to them. It comes from their past. It's not made up, they're not doing it just to annoy you.

This is the part where I've drawn this beautiful Chinese dragon-their beautiful, sinewy bodies, and this big face with a beard and all those little tendrils coming off of it. with respect to that dragon idea, I say the head of the dragon is in the present, but the body, that banner-like body is all of its experience in the past. So whatever is coming out of its mouth, or eyes, or ears or whatever, in the present, is from the past. Okay, so it's good to remember that the dragon is a whole creature, not just the head. Their thinking comes from experiences in the past.

So the second step is to go like, “Oh my gosh, you’re sitting here yelling at me. And that’s just not right.” Well, that’s a judgment on your part. Instead, you go, “You’re sitting here yelling at me. This has roots. I want to know what those roots are.”

And step three is you let the other person know that you accept what they’re going through. Whatever is going on for them, you accept that it’s valid. You say, “Wow. Okay, there’s probably something really important here, for you to be this upset about it.” And that is my invitation for you to speak and me to listen.

And the fourth step is, when I’m listening-if that person accepts my invitation to speak-is to stay out of judgment while I’m listening, to keep in mind the whole Dragon’s body. So that’s empathic listening.

So when you are trying to develop relationships, it is developing a relationship with all those dragons around you. And there’s no way to understand that dragon’s body, that dragon’s background, that person’s experiences, without letting them have time to tell you. Right? They’ll tell you the parts they want to tell you. They’re not going to tell you the parts that hurt them so much they can’t tell you. You’re not there to counsel them. You’re there to recognize their validity and to show them that you are interested in building trust.

Andrea Goulet

I was going to ask something but it will be a tangent, not answer Scott’s question.

Indi Young

Scott, you interject.

Scott Ford

This is the big, like, interjection is something that I struggle with. So like I really struggle with interrupting people and I’ve heard people say that in order to be a good interviewer, you need to know how to interrupt at the right times and like I’ve been trying to listen to people who I really value who interview on the radio and like, try to pay attention to, “Oh, they interrupted there, why did they interrupt there?” And like I really struggle with this, because I don’t want to be perceived as rude. And I guess that’s one of the- you were mentioning before-like the core beliefs that I lead with, right? Well, like, I put it up like a shield, but because of that particular core belief, it’s a silent shield. Does that make sense?

Indi Young

What Andrea said: you are a listener. And so the core beliefs are to hear somebody. When you are an interviewer, you are not a listener, you have an audience that you want to entertain, or inform. So you have a goal. As soon as you bring a goal into the words that are coming out of your mouth, you’re switching back into surface-land, and trying to do a little bit of directing.

Scott Ford

Okay, okay.

Indi Young

So what you’re doing as an interviewer, as a podcaster, is slightly different than being a listener.

Scott Ford

Okay, well, yeah, that’s, that’s useful. So yeah, so I do have to, like, adapt, in this context.

Indi Young

Yeah. Listening, just listening, to develop relationships is intense. I like to say it's like putting on another hat-it's your empathic mindset listening hat. And that hat is dang heavy, so your neck's going to get tired, and you might get a headache. So you can't leave this hat on for very long, and you have to develop your skill over time to be able to listen for longer and longer. Don't try listening to somebody for more than five minutes at first or more than 10 minutes at first literally. I mean, you, Scott, you're a listener. You probably could listen to somebody for two hours with no problem.

Scott Ford

Yeah, like I probably have. [laughter]

Indi Young

If you're good at picking out what a person is saying, and helping them go from surface to depth, and offering them reassurance that you think what they're saying is valid, and accidentally losing their trust and then having to regain it by reiterating how you think what they're saying is valid. Again, leading them to depth a little bit, asking more, well, you know, "Something must have happened that made you that upset." That isn't an invitation to depth, right? That's an invitation to get some context and explanation out there. But then to say, what that inner thinking was, or where those emotions came from.

Scott Ford

Nice. I like it. Thank you.

Andrea Goulet

Yeah. Something you said earlier, made me think of slide that I gave at a conference recently, in the Agile community, and there it's all about trust. And so I kind of build it down. It's like, okay, if we want to have healthy teams, we have to have good communication. If we want good communication, we have to have trust, if we want to build trust, we have to develop empathetic skills. And so like kind of breaking it down, I think of it kind of as like the layer model. It's the low layer. Like it's kind of like the C of the programming world, like it's a very low level, kind of- [laughter]

Scott Ford

Like it's the byte code in the machine.

Andrea Goulet

Exactly. Yeah.

Indi Young

Right, yeah.

Andrea Goulet

You can't use this fancy JavaScript library over here, if you haven't developed these very, very, very core skills.

Indi Young

If in your own world, in your own sphere, the word empathy makes the bell ring like it sounds bad, right? Don't use that word. Use the word listening. Like Scott said earlier, words are powerful, right? Use the word listening. Okay, that's what you're doing. That's a type of empathy. Empathic listening.

Andrea Goulet

Yeah. My personal mission is to change the way we think about legacy code. And change the way we think about empathy.

Indi Young

That would be ideal.

Andrea Goulet

Yeah, so my personal mission, but for sure.

Scott Ford

You know, like, it's important recognize the context you're in. And if you insist on using a term that's going to alienate your audience, then you're going to lose them. Right. So, kind of recognizing that and then adapting so that you can reach them and get the message across is useful too.

Indi Young

Yeah. It's always, "Yes, and-" Everybody is different. Every situation is different. Even, every person is different from hour to hour or day to day. I've invented something called Thinking Styles instead of Personas, because people tend to use Personas like a horoscope. Like "This person is this way in their whole life." I use thinking styles because it's contextual. So you might be thinking in a certain way, given certain contexts, but different. The example I use is as an airline passenger. If you're traveling on business, you might behave and think a different way than you would if you were taking your toddler to Disneyland.

Scott Ford

Yeah, when I'm business traveling the way I hold my body, the way I interact with other people is completely different than when I'm traveling with my family I'm much more chill. When I'm traveling for business, I'm much less so.

Indi Young

Yeah. So imagine that that applies to everything. It applies to everything that we study and every bit of geographic world that we live in and our contextual, intellectual spheres, all of this.

Scott Ford

You mentioned "Yes, and-" earlier, and that is one concept that has taken a lot of deprogramming for me to truly adopt. I feel like my natural tendency, I don't know where the natural tendency came from, was very much to say, "But, wait-" Or, "But, what about this?" Or to say, "well no," or "well actually," is what I usually come up with. And so I think, I quickly fall into the bucket of mansplaining, explaining way too easily and too often and I try, it's like, it's been a 10 year journey to try to do that less.

Indi Young

Well, so I think possibly as an introvert, I'm an introvert, I use "no" as a shield. I want boundaries, and people are always pushing in on my boundaries. And if I said yes to everything, I would go crazy.

Andrea, motivated me to do the courses, and as a part of that, I'm trying to make this material available to people in other countries who can't afford the gosh darn currency exchange rate. So people would say, "Well, what if I pay this?" And I would think to myself- "No, I'm not making so much money and if I don't make money, then I can't pay the mortgage and da da da." Well, instead, I would always just say "Yes! Yes, no matter what; no matter what, yes." And it's worked out so beautifully. In the community, as a whole, there are plenty of people paying full price, because they belong to a corporation that pays for education. And there are plenty of people who are getting extreme discounts. Because, "Yes, and-" right? I want these capabilities to be available for

people no matter where you are, no matter what your background. And so I think my biggest challenge is just getting word out farther and farther and farther.

Andrea Goulet

Well, hopefully, we're helping you do that a little bit. That's my goal to, so tap into me however much you want. I love being cheerleaders for other people. And I think you're absolutely right. Your work is so, so, so important in the world. And I'm just so grateful that you have spent so much time like really thinking about this, and synthesizing all of this information-we were talking earlier about how synthesizing is kind of your superpower-and then making it clear for other people. To take these really abstract concepts and make them more accessible. It's really important work, and I'm so grateful to have you on the show, and as you my friend, and yeah. I'm here for you to like, shout you from the rooftops. So we've got one question left. Okay, we ask everyone on the show. And so the whole purpose of this show is to change the way we think about legacy code, right? Normally, we think of legacy code, and it's full of shame. "Who wrote that crap? I don't want to touch it." And we're trying to say, "No, like, there's so much value here." There's that history, right? Like what you're seeing on the screen, is that headed dragon but there's so much more context behind it. And so, in your mind, what is one thing that you love about legacy code?

Indi Young

It is the people, it is the people. So we have not been coding, as humanity for very long, right?

Scott Ford

Right.

Indi Young

And those first people writing first bits of code, holy cow that is cool. And what they were doing, and what they were up against, and what their environment was, and who was like riding herd on them to get it done by deadline. And, what were they going through personally, because now they're spending all their time at the the computer trying to get the code to work out and their family is yelling at them or something, right? The people are amazing. All those past people, some of them are starting to retire. Some of them have already retired. There are even a few who were at the beginning of the 1900s-and have passed on.