



# **SDS PODCAST**

## **EPISODE 770:**

### **THE**

# **NEUROSCIENTIFIC**

## **GUIDE TO**

# **CONFIDENCE**



Jon Krohn:	00:03	This is episode number 770 with Lucy Antrobus, advisor to the United Nations.
	00:19	Welcome back to the Super Data Science Podcast. Our guest today is the articulate and inspiring Lucy Antrobus. Lucy advises the United Nations on Innovation for Impact, and she was previously founder and CEO of an award-winning NGO, as well as co-founder and COO of an EdTech company. Critically for today's episode, she has run confidence-building workshops for over a thousand people of 30-plus nationalities, including refugees who have just arrived in Switzerland. Today's episode should be fascinating to anyone. In it, Lucy details the science of confidence, which we can grow through repetition and practice, much like we can develop muscles by repeating lifts at the gym. She provides concrete guidance from neuroscience research on what we can do to develop healthy confidence in ourselves and in those around us. You ready? Let's jump right into our conversation.
	01:07	Lucy, welcome to the SuperDataScience Podcast. It's awesome to have you here. Where are you calling in from today?
Lucy Antrobus:	01:12	So I'm calling in today from Cape Town, South Africa, which is a radiant day in March.
Jon Krohn:	01:19	Oh, really?
Lucy Antrobus:	01:19	Yes.
Jon Krohn:	01:20	I was expecting it to be from England, so that is a nice treat. I guess it's a great time of year to be spending in South Africa. Do you often winter in South Africa?
Lucy Antrobus:	01:32	I try to. My family is actually from here and my cousin is getting married soon, so that's part of the impetus of getting this side.

Jon Krohn:	01:39	Very nice. And so we have known each other for a very long time. I guess we met at the St. Gallen Symposium in 2014, so it's been a decade that we've known each other.
Lucy Antrobus:	01:52	A decade, yeah. The Clash of the Generations was the symposium thing back in 2014, yeah.
Jon Krohn:	01:59	That is right. Good memory. And I stretch back even further, because I've known your sister, Kate, since 2007. So lots of Antrobus-
Lucy Antrobus:	02:12	In the Oxford Collegiate days.
Jon Krohn:	02:14	Exactly. That's right. So you are here on the show not to get into my educational history, but to tell us about confidence-building, specifically the science of confidence-building, which is fantastic. You've been doing tons of work around this now for years. Tell us how you first got into it.
Lucy Antrobus:	02:38	Okay, so it started when essentially I was working around the world, in Mexico, in South Korea, in Belgium, in Switzerland, even in Texas for a multinational engineering company, in fact, and the biggest thing I found, or my biggest driver or motivation working in all these different cultural contexts was rather than necessarily how do we drive product sales or how do we invent the next best product for the company, I was more fascinated in all these different cultural contexts, how do we unlock and empower the talent that was in those communities? So I started running experiments in my kind of so-called Human Experimentation Laboratory, which happened all the way around the world, and through these ingredients mixing together, I realized that no matter what the cultural barriers are, there are always ways that you can slice through your local context and find ways to empower people and human being, and unlock talent to achieve greater good essentially.

03:31 And then I manifested that in an NGO I built back in 2018, which was looking at unlocking the confidence of marginalized communities, and specifically refugees, and we started to basically manifest and manufacture these transformations or these miracles with people who had experienced severe traumas and suffering, and had extremely low self-esteem and confidence at the time, and get them to open back up, and even to the extent that you've got somebody who's been mute for several years and they start to speak again, and taking then the lessons and ingredients for that community, I was like, "Hmm. There feels like there are some common denominators of the human experience here that we can take those lessons and apply it to anybody who wants to scale and grow their confidence, and as a result, the impact that they bring to society."

Jon Krohn: 04:24 Very cool. It sounds like an amazing atmosphere, very impactful atmosphere, particularly that last one there where you're helping refugees with their confidence. There must be a lot of situations where, as a refugee, your confidence is shot, the kinds of situations that you might've left behind in your home country and then now arriving in a place where you may not speak the language, where you don't know the culture. Yeah, I can imagine that is a very challenging environment indeed. So as far as a laboratory goes for testing out what you've been learning, that seems like about as powerful a lab as you could have, and also, you probably don't want to be blushing on air, but I think it's awesome that you were doing that work. You no doubt made a big impact on a lot of people through that. So thank you. So let's start off with what is confidence, Lucy?

Lucy Antrobus: 05:17 Well, in my personal definition, confidence is a physical manifestation of your self-belief. So you can kind of slice that into, "What are my internal beliefs, and then how do they manifest in my external behaviors?" And the exciting

thing about cutting and splicing them in that way is by influencing the one you can shift the other, and by breaking it down into smaller, smaller pieces, it becomes much more accessible to learn and grow and iterate and improve.

- Jon Krohn: 05:46 Nice. That's a great definition. So physical manifestation of self-belief. And how do we grow confidence?
- Lucy Antrobus: 05:55 So there are so many ways in which personal confidence can be grown. What I think is really exciting is there are a lot of potentially untapped ways that you can actually do it and level up together. So by putting people in a group environment, you can leverage different types of neuroscience, of amplification, of the feel-good chemicals, of neural mirroring, of role modeling from other people to help you grow faster than if you're in an isolated solo environment. And I think here what's interesting about confidence is I see it as inextricably connected with community. If you are self-confident in a vacuum, you have nowhere really to manifest, or use, or go and deploy that confidence, so in some ways they see it as a wasted resource, but if you are in a community, that's the place where you're getting your confidence tested when you are presenting to a big group of people, when you're having to work and collaborate with a team, when you're having to share your confidence and expertise.
- 06:51 So in what I share about confidence and how to grow one's confidence-buildings, I tend to come back to how we can rapidly multiply it in a group context. And to give a few examples or ideas, I think a great way of demystifying in a way this nebulous thing that is confidence is looking into how do we break it down, and I think that there are always areas in people's lives that in some areas they are super-duper flying all cylinders and confident, and in other areas they feel a little bit lacking or more restricted, and there's lots of lessons where you can kind of cross-

apply where you do certain things particularly well and how you can rechannel that confidence into a new area. But let me give some fairly common denominators that a lot of people are approaching, or dealing with when we're talking about confidence.

- 07:35      So something might be presenting in front of a group or public speaking. It's a classic area where people feel extra fearful and needing, like, "I don't feel very confident about this," or needing an extra confidence boost, and so one of the ways and quite a playful way that I'll look into how do we build people's confidence is breaking it down into what I call the muscles of expression, and these three musketeers are the voice, the body and the emotions, and if you can tap into and become first cognizant and aware, and then influence your own personal behavior in those three departments, then you can use that also to influence how you come across to people around you. So in the department of the muscles of expression, an exercise I might do with people is actually just getting them to stand in their body, to manifest big shapes, to manifest small shapes, and just seeing how that shifts compared to their usual way of being.
- 08:31      A second is to similarly tap into the voice and experience how am I breathing? How is my voice... Just building that kind of awareness of oneself and one's breath. And the third area is am I aware of how I'm coming across? What are my emotions and how do I use those to positive influence how I'm coming across, or to [inaudible 00:08:55] to the other person? So that's a soundbite of some tools that you might look into. But in a way before doing any of that work, I think it's important to consider when people come into an environment and they want to grow confidence, what attitude and what way of being are you bringing into that? So in that sense it comes back to actually my scientific days, or my background as a chemist, or as a scientist.

- 09:21 I look at in human transformation, I see it in a similar way or similar barriers to change to transformation as chemical equilibrium. Bear with me for a moment. So with that, I'd look at if I take A and B ingredient, how do I convert that into ingredient C? It needs to get over some so-called activation energy barrier, or it could be a human resistance, and this barrier is the reason that things don't spontaneously combust at room temperature, but if we apply a catalyst, something like a heat source, we can jiggle those atoms, jiggle those molecules up a bit more, and when they collide, they have sufficient energy to make change and transform into something C. So the kind of classic high school experiment of that ilk, or junior school perhaps, is magnesium metal, apply it to a flame and then it burns this beautiful bright white and produces a metal oxide. If you don't have that flame here, you're going to keep the magnesium at room temperature.
- 10:23 So in a parallel sense, when I look at human transformation, I'm looking at how do we shift the environmental factors, or how do we lower that human activation energy barrier to transformation and change? And so what are the ingredients that I actually need to put into that environment to help that transformation happen more naturally? And one of them, and this is where it gets really interesting with the neuroscience, is in making people feel good, because when you start to feel good, your performance naturally shifts. So if I'm feeling a bit nervous and scared today, and my body's going to start manifesting that, I'm going to have a more closed body language, I'm going to make less eye contact, I'm going to have... Literally, I'm going to take up less space.
- 11:08 But if I'm feeling like really I'm all about it today, I'm tapped into my power, into my confidence, I will physically take up more space and have more open body language, be more exuberant and sharing with my energies and gestures, and what that means is that



creates a shift in performance, or how people perceive me irrespective of any work that I've actually done. So there's quite an intriguing little piece of neuroscience in there, and by first making people feel good, you can help them shift their performance without fixing anything or learning any new skills, and I think that's really, really powerful. And especially in regards to people who perhaps come from a traumatized background or a marginalized communities, it's not about changing or fixing anything at first. You make people feel good and suddenly these problems that we had before just kind of dissolve.

Jon Krohn: 11:58 Very nice. Yeah, so what are the kinds of things that we can do to make people feel good? So when you're in that kind of scenario, you're confronting people who have maybe left their families, or worse, has befall their families, and they've found themselves in Switzerland as refugees. They don't speak the language. You've got a group of them in a room. I don't know even actually really... I don't even know the mechanics of how you communicate with them, Lucy. What do you do as a starting point to make them feel good right off the bat?

Lucy Antrobus: 12:34 So there's a whole world of science out there, so we're going to ice break this, or tip of the iceberg, but if I bring a little bit of human-centric design into this, I'm thinking first I've got to design for context. So where have these people come from and what are the antidotes to those things that are lacking? For example, taking some broad brush generalizations. Pretty much all refugees will come with some suffering or trauma, number one, and number two, they'll come in with some isolation or disconnection, because they don't speak the local language, they don't have local community, they're not employed typically at the start, et cetera. So what I'm going to first look at doing is what are the antidotes to those traumas or suffering, and to the trauma, the antidote I would say is the joy, and to the isolation, the antidote being the connection. So



I'm going to then facilitate these exercises which are bringing in joyfulness and connection.

- 13:33 But another layer of the science here is you've got to make it really easy to start. I'm like, "What is the smallest first step they can take that gets some positive feedback, some dopamine running in their system to be like, 'Hey, this is going well.'?" A first thing I might get them to do is a little play icebreaker exercise where they're showing their name with a playful gesture and the origin of what that means, because you're starting with something which is totally in their comfort zone and that it's your name. It's the first thing you come up from birth.
- 14:00 So it's a very, very low-risk thing to share, but we're making it playful and we're creating some engagement and intimacy and connection with others, because we're sharing something about their name that others do not know, so it's creating a point of connection, and we're being playful with it by bringing some gestures into it. And these things actually, if you look at also the neuroscience behind it, you've got things like your novelty spike in the brain, which is generating a bit of dopamine. You're using visuals also to visually imprint certain memories on the brain, so people become less forgettable. You're using jokes and humor and storytelling, again, to create that engagement and these anchor points that the brain can remember, hence all creating this more connected environment.
- 14:44 So that's an example of one thing, which is maybe the first easiest step, and another area or way might be running an exercise where you have two people together and one is sharing just about their passions or their hobbies, and you're literally intentionally asking them to share something that they get excited and they care about, because that is starting to manifest this openness, this excitement, and this energy that the other person is

then getting to receive and experience them in this very open state. And when they're in that more open state and you're pumping them with this, "I'm remembering this happened," and I'm starting to biohack myself to feel good about it, then you're able to then apply that sort of more high- performance state into other things you go on to do some deeper work later on.

- Jon Krohn: 15:26 Very cool. And I understand from talking with you earlier that once you have elevated people's minds or elevated your own mind with these kinds of feel good hormones through play, through bonding, connection, these kinds of exercises that you just described, then comes the tough work, right? That's the second step.
- Lucy Antrobus: 15:45 Absolutely. And Jon, let me give you another visual to paint a picture of why this is so powerful also from a neuroscience or neurochemical perspective. So when we're able to make people... So quick visual, quick painting in our minds: So in your mind's eye, I want you to have visualized two brains. The one brain on the left-hand side is a depressed brain, and in that brain you see a brain which is mostly blue and gray matter. It doesn't look like there's too much activity there. On the right-hand side, you see a brain which is a normal brain, and in that brain it's got yellow and orange and green and all sorts of things which are lighting up. So they're very distinct visuals of these two types of brains. Now, what is one thing that we know that's a difference between a depressed brain and a normal brain? One of them is depressed people generally feel less good and are unhappy and depressed, and feel bad about themselves typically, and a normal brain is going to have a reasonable level of different feel good chemicals pumping through their system.
- Jon Krohn: 16:49 Yeah, and so to get into this, the neuroscience of what you're talking about here just a little bit more, just one

step more complex, is that you're talking about specifically these kinds of brain scans called positron emission tomography or PET, and so when you are looking at scans side-by-side, you can view brain activity in real-time as people are going about cognitive tasks, and what you're saying is that in a depressed brain, the PET, the PET scan of their brain, it looks actually literally... I mean, I have up on my screen, we can't do screen shares in this podcasting platform, but I have up on my screen some visuals that you sent to me and they literally look like dark and gloomy. There's a lot of black and very little bright spots in the images, whereas as you said earlier, the normal healthy brain, there's a lot of brightness, there's oranges and yellows, these warmer colors that we use in these kinds of scans to suggest higher levels of activity. Yeah, sorry for interrupting you, Lucy. I just wanted to give that visual and technical background.

Lucy Antrobus: 17:59

Fabulous. Thank you for the clarification there. Absolutely. And so what we can... Looking at this from quite an artful perspective, what we can also see from that is that more areas centers of the brain are lit up. So in a way, you're tapping into more capacity in your brain because these feel good chemicals help in a way grease the wheels for the functioning of other types of cognitive processes, and to paint a picture about what are some of these things that we're generating, the type of feel-good chemicals I'm talking about here is things like dopamine, which probably people know more about, oxytocin, which is typically the connecting chemical, and serotonin. Though a side note, most of your serotonin lives in your gut, so if you want to have some other conversations about fermentation gut health, feel good, now these things are all interconnected, we can do that, but I'll park that for now.

- 18:48      So those are the things that you are helping light up your brain with, and why I mentioned that is it's tapping into this greater capacity, and everybody I think wants to find ways to tap into greater capacity, greater performance, elevating their confidence and productivity and so forth, and I think what's interesting about this is this kind of shift in moving away from the amygdala or fear center of the brain into, let's say, prefrontal cortex or areas where you're more in control in your decision-making, more relaxed states, that can have a powerful impact on all of your processing, but this is a way by channeling these group connectivity, it is a way that that experience can be manifested for the group and through bonding, and I think that's often an overlooked way of perhaps saying, "How do I hack my performance? How do I do and feel better?"
- 19:40      There's ways that can be achieved not just in isolation and trying to biohack and improve ourselves to optimize forever, but also that we can tap into and make the most of that in a group context, and that's pretty powerful. And there's another statement alongside of that. If we think about if the broad awareness of what these kind of connections or things are doing to our brain and to community in an era that we've just kind of coming out of COVID, how rather than necessarily going and getting those extra antidepressants, we're taking a dose of community and intimacy, and how that there's got such a strong correlation with connectivity in society, but also people's mental health all around the world.
- 20:27      It's just one of the ingredients, so I won't belittle any of the others, but it's really interesting and really important not only in terms of, I think, tapping into an elevated performance, but also in terms of connectivity with other human beings is also correlated with a higher resilience. And to throw another scientific kind of term out there, when I say resilience, what I'm speaking about is from a

science perspective, resilience means the capacity for a material to spring back to its original form after stress. So if you imagine elastic band, it gets stretched and then it springs back, and how fast that springs back is the the physical definition of resilience, and so when I talk about human resilience, it's also this capacity after you've had a stressful day, a stressful meeting, a stressful event, how fast you can spring back to your normal way of being rather than being compromised for however long after as a result of that.

21:25 So in terms of... I am a believer that in or looking and seeing how the world is going with our mecca crises on a few fronts, including climate change, that we need to be more and more resilient communities, and those are the ones that are going to be able to overcome the different challenges than moving forward, and so it's kind of interesting or important to talk about how do we build our resilience and top up our own personal resilience fountain so that we can spring back when inevitable disasters will happen.

Jon Krohn: 21:56 Nice. I like how you've used a number of physical or chemical analogies so far to describe human behaviors. So your chemical example, the activation energy required earlier from chemistry, and then now talking about physical resilience and relating it to human resilience. Very cool. At the end there you talked about... Oh. Sorry, you'd like to speak.

Lucy Antrobus: 22:21 Well, if we want to complete the trio from these three hard sciences and just throw in biology in there, then you mentioned, you asked earlier about, "Ah, so what are the ways to build confidence?" And if I want to feel, or when I feel as I often do walk into a room and feel absolutely bulletproof and overly-confident that with the people in there, no matter how traumatized, no matter what their background, I can shift their brain chemistry, I can shift

their confidence levels and have this bulletproof confidence that comes over to me, one of the ingredients... There's a multi-layered scientific process there, but I could geek out about for hours, but one of the things we've talked about is about shifting people's brain chemistry, elevating their performance so that you tap into their innate superpowers rather than dealing with their resistance, and a second thing that I will use, and this is coming from biology in a way, is contagion.

23:15 And when I say contagion, this is specifically coming from the contagion of courage. So courage is a really interesting ingredient, let's say, in my human alchemy that is really interesting because it's contagious, and how do I know that, or like, "Hey, Lucy. What do you got to prove that?" Now, for example, you just smiled and I'm starting to mirror you. So somebody smiles, often people will start to smile around them. The similar classic, everybody will know from school, there's a boring teacher, you start to yawn, and as you do, you notice many people around you also will start to yawn, that these little biological mirroring, or neural mirroring, that is happening and this little contagious. So if you know that you can kind of use that to positive effect.

24:01 So getting back to how does one walk into a room and have bulletproof confidence that I can influence the room and get people to shift and increase their performance and their confidence. So the courage piece is I don't need the entire room to be feeling already firing all cylinders, and like, "Yeah, I'm going to try," and daring that particular day. I need to show up with one, a little bit of that spice or that energy to be able to share with the room, and then two, I just need one person, one individual, whether it's 10, 20, 50, however many people, I just need one person to feel like, "Ooh, I'm curious enough to kind of put myself out there, or take that first step."

- 24:38      And then we combine that with what we talked about earlier, making these steps really small but iterating them rapidly. Then one person is just a little bit curious enough to like, "Hey, I'm going to take this step. I'm going to share something, I'm going to participate." That breaks the ice, and then you can create this kind of domino effect, because someone says something, you get that kind of... What is the word I'm looking for here? That rush of cortisol and you're feeling stressed and nervous, and then you dare to do that slightly scary thing, like speaking in front of the group, and then you do, and it kind of goes well, and you're sort of supported or applauded for it, and you're like, "Ooh," you get this little dopamine spike. And then the other people in the room are like, "Oh, hey. I want a little bit of that too."
- 25:19      And if you remember environments maybe you were doing a lecture or something at university, or listening to one, lecturer goes like, "Anyone, any questions?" And silence. But as soon as the first person kind of breaks the ice and put the hands up, ask the first question, then we start to get this domino effect, and part of it is coming from releasing people's inertia to participate. So this is a way or an ingredient that you're using courage as a positive contagion and certain environment factors I will use to influence that, like when they're sharing something, they dare to participate it, to encourage it, to applaud it, to recognize it, to see it, rather than diminish it or ignore it, and that's going to encourage other people, "Oh, maybe I'll try this too. It doesn't seem quite so scary." And then you just multiply it across the entire room.
- 26:05      So that's why if you're going to do something big or bold, one thing to help you feel extra calm and prepared about it is knowing, "Hey, if I've got the capacity to influence one person, I got the capacity to influence the entire room," because they're going to start to work with you. And you combine that then with working with shifting everybody's



brain chemistry and then you're on fire, then things flow. So that was just a little completing of the trio of a chemical, a physical and a biological reference there for the scientists out there.

- Jon Krohn: 26:34 Nice. So following on from that biology, are there more neuroscience-backed techniques that our listeners can follow in addition to the courage as contagion that you just described, to allow themselves to get that kind of bright brain scan that we were talking about with the positron emission tomography? We were talking about bright brains, how can our listeners be getting big, bright lit up brains in those kinds of PET scans?
- Lucy Antrobus: 27:01 Sure. Okay. So big challenge you've thrown at me out there, but there are a number of different ways, and what I would also say is to get that real brain shift, what is helpful to have those... The ways that I apply and find it most interesting is this kind of human experimentation laboratory, the human alchemy that happens when we have more than one individual. So I would encourage listeners to think about how can I test or experiment with these in a group context, in a live experiment, rather than these things being able to really work in isolation in a sort of isolated test tube, less effective, but we'll see what we can do here.
- 27:34 One example actually to think about is when we talk about connection, one of the ways that people connect is through eye contact. So Jon, if I was to kind of give you a nice eyeball of eye contact for a while with you, with other people going on, and you maybe had been by yourself and isolated and doing some deep think work for the rest of the day, and you're getting this being eyeballed and you're getting a dose of eye contact, that's one of the things that does release oxytocin, which is one of these three feel-good chemicals. So just that simple mere act of connecting a little bit does help sort of grease your

neurochemical wheels for other types of feel good and performance, and that's one of the small ways.

28:18 So of course if you start to... I give people long stares and it has to be used in appropriate context. If you're kind of giving people long eyeball stares, that can come across as quite weird, so I'd use with discretion or with caution or with your natural critical minds of what is an appropriate way to use it, but that is something that can tap in and support people. And again, if we're thinking about somebody who's used to being quite isolated and often low confidence and isolation can manifest in people being very nervous and scared to look people in the eyes and looking down, and having closed body language, then just like a gentle way of reintegrating that can help normalize them and make it easier to do that. So that's a little one going on there.

29:03 Another and a second thing that I would do, which I call some of these gifts of the universe, and I would actually reference Julia Cameron, who wrote *The Artist's Way*, in the term how I'd frame this concept, but called believing mirrors. So one way that you can actually gift something to another and empower yourself in the process is by sharing a compliment that is authentic and genuine and an observation about somebody else's performance that is appreciative and affirmative. Let me give you a bit of, again, scientific context for that. Our human brains are wired to be able to spot more easily the negative, and that's helped us continually improve and innovate. How can this be different? How can this be better? And this relentlessness or restlessness that the human race has for innovation and improvement, which is glorious. However, what it can mean is that our critical mind or brain can latch on much faster than recognizing and noticing some of the good that's out there in the world.

- 30:09      So I'll split this into two. So typically our brains, if we're shared some feedback, if I say to you, "Jon, three things positive and one thing negative," you're going to experience that as neutral. Side note, there's a lot of different research out there as to exactly what the magic number is, but typically that's kind of a fairly known framework. So it's got to be more than three things to say to you positive for you to experience as positive rather than criticism or net neutral, and so I think people will also be aware or know that we tend to always be our worst inner critics, but we can be quite helpful and empowering to other people because we're a little bit more objective with others around us. So for example, Jon, you're kind of having a slow or low day and you're like, "This isn't going right, this isn't going..."
- 30:57      I'm like, "Hey, Jon, I thought how you delivered that or how you shared that complex piece of science in a really clear, simple and articulate way is really powerful." As long as it's genuine and authentic and it's observing and noticing on the affirmative, that can be a powerful gift to somebody. It can go, "Oh," and kind of light them up. And again, if people are coming from a context where they're not really getting feedback loops in their community, their university or their place of employment, or that they don't have those things, then that can be a little gift of the universe to help boost them up while they are rebuilding themselves in a way, and in giving that and in seeing the sort of shift that you can see on someone else's face, "Oh, wow. You noticed me. I feel seen, I feel observed," lighting up in the face, you also get a kickback of a feel-good factor by doing that. So you get a little bit of a dopamine kickback in that process.
- 31:49      And the term that I'd use there is called believing mirrors. So when you're maybe not in the mind space to feel fully empowered and, "Oh my God, I'm a badass," you're just not tapping into energy, someone else can help you

through this act of being a believing mirror, can help you mirror or manifest that, and likewise, you can do that for another. So again, it's connected to community, and if you want to geek out a little the next layer of what's actually going on in a biological neurochemical level there, there's also these... We have mirror neurons which kind of act to make shapes of people around us, and to imitate their behavior, and that's also a little bit of how you can hack this neural mirroring phenomenon.

32:32 And to give a little bit of context of where that can come from, people who would be in education, role modeling how important it is to give that model of how you can look, how you can behave, the kind of knowledge you're sharing, and similarly, when you've got a little kid growing up, what do they do? They're repeating, they're imitating what they see around them, and that's another example of this role modeling or neural mirroring at play, and how fundamental it is to the growth of the human race and our social behavior. So that is a second cheeky example.

Jon Krohn: 33:02 Nice, and I do love Julie Cameron's Artist's Way. That book, actually, I think I had talked about this maybe many years ago on the podcast, probably when I first started hosting it almost four years ago now, was that that book was critical in stimulating my self-belief in being a content creator, in getting myself out in the world as opposed to just writing internal reports. And so yeah, I could go into a huge amount of detail there, but this is your show, not mine. Basically, I do recommend for people who want to be tapping into their inner child and feeling more creative, feeling more playful about the world and life, and finding a way to expand your sphere of influence further and further through creativity, Julia Cameron's Artist's Way is fantastic.

- 33:58      It's designed to be... If I remember correctly, it's like 12 weeks of exercises, and for me at that time, I was busy, and so it took much longer than 12 weeks to get through, but actually, if I remember correctly, I only got through week eight or nine, and even by then things had started to snowball so much that that led to a series of events over many years that I haven't even had time to go back and finish weeks 10, 11, 12, because there's been so much opportunity and growth, like hosting this show. So definitely really highly recommend that book.
- 34:36      And yeah, to recap where we are so far, to light up people's brains like we see in those healthy PET scans, including our own brains, you've so far covered smiling with high energy to stimulate contagion, eye contact to stimulate oxytocin release, and these kinds of believing mirrors that we talked about most recently where if you express capability, then it's likely to reflect back at you, this mirror, and really great tip there that you had on the three to one negative to positive ratio in order to have somebody come back just feeling neutral from some feedback. So great, and I believe you might have one more for us.
- Lucy Antrobus:    35:21      I've got two more. I can give you one, but I'm going to take us on a tiny little anecdote. You just mentioned connecting with ones in a child and a beautiful scenario memory comes to mind when we started experimenting with these principles in one type of extreme community in the refugee community, I had somebody say... This was a matter of after two and a half hours... Less than. Up to two hours together, somebody said, "I've been depressed. I was near suicidal, insomniac, can't sleep, reliving traumas, and now I've reconnected with my inner child," and at that time, I did not know what that meant to connect with one's inner child.

- 36:03 I did not know, but I knew we're onto something, and that part, these kind of anecdotes or stories provided some of the field like, "We don't know exactly. We haven't decoded exactly what we're doing here, but it's really powerful because people are making shifts in this space that they haven't in years, and people who've been working in this space for years just haven't seen anything like it, and we're manifesting it in a matter of several hours." And so that's quite a cool piece, and perhaps to loop back up, I'm thinking let's just be like, "Oh, hey, but you make people feel good and then they drop back down to real life, and real life can be real (beep) sometimes," and I totally resonate and I see and hear that.
- 36:40 Just to anticipate that kind of thinking, it's how my critical brain works anyway, is when people are leaving these kind of sessions, they're leaving with, A, the tools that they've experienced, B, some practical experience in kind of re-carving new neural pathways of having practiced these things. It's not just a theory, it's a real practical immersion, and that gives them sort of the cognitive rationale to say not just by emotions, but now, "Oh, I did this, and there's a new hard data point about when I did this and why I can keep leveling up from there," and a third thing is they're leaving with this integrated and connected community that they've done sort of deep and vulnerable (beep) together. And by leaving with that, you've got accountability buddies, you've got a community of support who can kind of continue to help live that memory together and keep leveling up their performance altogether. So that's some of the packaging to make sure people aren't walking away and then it's just dropping and disappearing, but can keep building from that.
- 37:37 That was my little segue into one's inner child. Jon, you'll be pleased to know I have now tapped into my inner child since then. This happened and really, really powerful,

interesting insights, but conversation for another day. So maybe I'll give you one more thing... One or two, what's it going to be? ... is literally dopamine spiking the brain through novelty. And I am a self-declared dopamine addict through semi-extreme or endurance sports, and cold water and all the likes. So that's a whole story, but I also enjoy sharing or giving other people some of these treats, and so if you do anything, again, it comes back a little bit to human-centric design, and I'll think about what is the kind of lived experience, how is this person going about their daily life? And if you can inject something in there which is distinct and different from that, you're going to give a little dopamine spike to the brain through the novelty factor, and what... Again, this is not just for fun. Fun is glorious, but it's not just for fun.

- 38:38      There's a purpose. There's always a why behind it, and the purpose there in terms of being behind that is by spiking people with a little bit of novelty helps grease the wheels of their neuroplasticity, and it makes it slightly easier to form new neural pathways. You're just, again, priming that activation energy barrier, or reducing the resistance to being able to do something in a new or a different way and manifest and grow new behaviors. Just breaking that ice on that first step. So that's a little thing.
- 39:10      And Mario, you can cut this if you want to, it might be too long, I'll just throw in one more is also another favorite of mine, which is using the body to hack the mind. So sometimes it can be hard for people to think about hard things, and that might be more of a stretch or a reach than just doing something kooky and weird with their body, but if you, again, shift and move your body in a different way than what you're used to, motion helps generate emotion. It shifts things, like movement, or motion generates emotion. The movement helps our, again, blood flow to the brain, how we think about new



ideas will come when we're on a walk, and these unexpected moments when we're moving. And I'm a highly kinetic person, so this is something I need to do to help shift the energies, break into the new elevated performance or new ways of thinking, and just by getting people to move or shift their bodies is an indirect, or what I'd call it, nonlinear pathway, to then actually connecting to their mind in a different way of thinking or seeing.

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| Jon Krohn:     | 40:11 | Fantastic. Thank you for all of those, Lucy. So we can stimulate confidence and lots of lit up brains through smiling to stimulate contagion, eye contact, believing mirrors, teasing neuroplasticity through novelty, and this final biohack of simulating laughter, for example, by activating your diaphragm with ha, ha, ha.   |
| Lucy Antrobus: | 40:41 | Do you want to try that? Yeah, okay, let's do that one. So this little body to mind biohack, body to motions to the brain biohack. Lovely little golden triangle there. So Jon, if you... Listeners, imagine this: So Jon, if you put your hand on your diaphragm, put it there and just push it in and out and use those diaphragmatic muscles, which you've sure been building in the gym. So just feel that stomach coming in and out. Listeners, feel free to do this too, and what I want you to do on this next round is rather than just push with your muscles, I want as you push your breath out, you'll also feel that shift in your diaphragm. So I'll do it first and I'll just go, ha, and if you'd like to go after me. |
| Jon Krohn:     | 41:26 | Ha.  |
| Lucy Antrobus: | 41:27 | Okay, great. So we're going to do that again. All right. Okay, so if we're ready, we'll do count of three. In three, in two, in one. Ha.   |
| Jon Krohn:     | 41:35 | Ha.  |

- Lucy Antrobus: 41:37 Okay, super. We're going to do that a second time, but this time with two ha-has. Again, just be guttural, get it out there, release the stresses of the day, of the morning. In three, in two, in one. Ha-ha!
- Jon Krohn: 41:51 Ha-ha.
- Lucy Antrobus: 41:53 Super. And this last time we're just going to do as many... So a really big deep inhale and we're just going to do as many ha-has as we can get out there. So again, three, two, one.
- Jon Krohn: 42:12 It's impossible not to laugh after that.
- Lucy Antrobus: 42:15 So yeah, so you can imagine. Again, this is an amplification you can have in a group context, but if you do that in a circle with 20 people or more, then one person starts laughing, it creates this contagion that gets mirrored and reflected around the room, the whole room starts Goddamn laughing, and you have totally just shifted the energy of the joy of the spirit of people in the room and broken the ice on something. So again, can loop that back into how we might use that to release people's resistance, break the ice to take that step to participate, and shift people's brain chemistry altogether.
- Jon Krohn: 42:52 Very nice. Amazing episode, Lucy. Thank you so much for taking the time and teaching us about how we can physically manifest our self-belief with confidence through all of these techniques. This was a lot of fun and certainly these ha's on air are different from anything I've done before, but for me, recording early in the morning, it's brought a new sense of energy into my day. I can tell that I'm neurochemically suddenly a different person. Thank you, Lucy, and hopefully many of our listeners feel the same. Hopefully, they weren't getting too into this while they were driving or something. Practice your ha-has safely at home. All right, Lucy. Thanks so much.

Before I let our guests go, I always ask for a book recommendation. Do you happen to have anything for us?

- Lucy Antrobus: 43:40 I'm going to loop back to what we spoke about earlier is The Artist's Way by Julia Cameron because that links to some of our discussion. Many more, but I'll leave it there.
- Jon Krohn: 43:50 Yeah, yeah. It's a great, great, great recommendation. Fantastic, Lucy. And then how should people get in touch with you or follow your work after this episode?
- Lucy Antrobus: 43:58 Fabulous. You can follow my work on LinkedIn, just find me, Lucy Antrobus, and I'll be the number one there, and I also have my own podcast channel, which is coming up soon called Human Alchemy. So I invite listeners also to follow and tap into that if you want to get a little bit more in the nitty-gritty of these different neuroscience-backed confidence-building techniques, and if you want to play with some more ha-ha-ha type methodologies.
- Jon Krohn: 44:25 Fantastic. Awesome that you're kicking that podcast off. Human Alchemy, check it out. Coming soon. All right, Lucy. Thanks so much for taking the time and we'll catch up again in the future.
- Lucy Antrobus: 44:37 Super. Thank you, Jon.
- Jon Krohn: 44:39 Learned so much from Lucy today. Wow. In today's episode, Lucy covered how we can develop bulletproof confidence through stimulating positive contagion through, say, smiling with high energy. We can also build confidence through maintaining eye contact, leveraging believing mirrors, teasing neuroplastic growth through novelty and activating our diaphragms with fake laughter that inevitably turns real. All right, that's it for today's super helpful episode. If you enjoyed it, consider supporting the show by sharing, reviewing, or subscribing, but most importantly, just keep listening.



And until next time, keep on rocking it out there. I'm looking forward to enjoying another round of the Super Data Science podcast with you very soon.