

CREATIVE INTELLIGENCE

WITH JAMES INGRAM

EPISODE TEN: CREATIVE INTELLIGENCE, DIGITAL CITIZENSHIP AND DECODING EMOTIONS

WITH GUEST SOPHIE KLEBER
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James: Hello and welcome to the Creative Intelligence Podcast, with me James Ingram, host and CEO of Splashlight. It's a series of conversations exploring tools and technologies that fuel creativity and inspiration. Now here are some deep questions: how do humans emotions work? What's the danger of technology in manipulating our feelings? How do we create a technology supported world where we want to live in, instead of a digital dystopia? My guest Sophia Kleber, she thinks about these questions daily. Sophia is a Global Executive Creative Director of innovation at Huge, a digital consultancy with clients that include Google, Hulu, Nike and Procter & Gamble. Sophie, welcome very much, we're glad to have you.

Sophie: Thank you.

James: Obviously your job involves a lot of things; user research, data, product strategy, product design, but it seems perhaps the thing you are most interested in is about how to create emotionally intelligent machines.

Sophie: Yes, I've started to look into that and into the idea of how machines can actually interact with our feelings. A couple of years ago, I think we're at a very interesting inflection point right now. We've perfected a lot of the, I never know which one it is, I'm going to say the right side of the brain, which is-

James: There's a side, the creative side.

Sophie: The one that's-

James: Oh the rational side?

Sophie: The other one, so the rational side we've perfected in terms of teaching computers a lot about how math works and how rational thinking works.

James: Inductive reasoning, right?

Sophie: Exactly. The difficulty with that I feel is that if we really want to have a world where computers actually move in the background where we're not tied to this box that's in front of us that we have to input in order to get an output but we want to move into the world of ambient computing, which physical technology, internet of things and sense of technology is ready for, then we need to have computers understand us better, more like we are as humans. We're always rational and emotional. That's when I started to look into the emotional intelligence that machines can understand which very quickly led me to the question, what emotional intelligence could in the future machines display, and what emotional interactions can come out of it, and like you said, most important, what happens to human relationships when it happens.

James: Yes, yes. Why do you think that it's so important in the future we solve that? This ambient computing, I love that term. Why is it important to you or you see that it's important we solve it?

Sophie: I think it's very important to solve it now and to talk about it right now because like I said we are at this inflection point. We have for the first time, computers that learn our language, voice computing, where we don't have to learn the input methods into the computer, but the computer learns how we talk, learns our language. That makes any interaction with computing amazing and more simplistic. Then we're reaching, what I call the end of the terminal world which is the idea that we interact through computers with a terminal, but it goes into this ambient computing, into the internet of things really, like magnify the idea that everything is technology and technology becomes like air, we breathe in, we breathe out, and it's all around us, and it comes more in the background. Because technologically we're at this inflection point right now, I think it is very important to discuss how we deal with it because the other fear that comes in is what Rosalind Picard at MIT coined, over a decade ago, as effective computing, the idea that computers can understand more than what we rationally say, but also how we say it. If we don't talk about this now, there is tremendous room for manipulation, and we're actually, the funny thing is that while we're very far advanced with computer technology, we're not that advanced in cognitive psychology. We don't really understand ourselves yet, so if we now start having computers dabble in that and trying to understand that and then potentially having commercial companies dabble in that, there's a massive opportunity for manipulation in a level that we don't really understand.

James: Who do you think the guardians of this are?

Sophie: I think we are. I think anyone who works in the field of user experience is. I'd like to say governments are, but we know how governments-

James: Right, right.

Sophie: Often are quite behind-

James: There's a temptation too, yes.

Sophie: Yes and if we look at, for example, GDPR in Europe, how many years it took to actually, you know, for the wild west. I think the most important responsibility lies in educating right now, so consumers can become responsible or make responsible choices. There's a couple of different approaches that are out there regarding emotional attachments with machines and the reading of emotions. In China, we will see this government implemented by the year 2020, I think is the idea, so China is developing tools where they can basically detect the emotional state of anyone in the street, it's part of that big kind of-

James: I've heard that, digital citizenship.

Sophie: Digital citizenship kind of thing, and they have a lot of experiments in schools where they detect the emotions of students. We already see the dangers of that because you can only, first of all, you need to understand what are you trying to set out to do? Are you trying to alter these emotions or are you trying to read these emotions to someone else, can alter their behavior? Or are you merely doing research to understand what the difference is between what people say and what people do. It's happening in classrooms in China, where they have emotional detection of the students, whether they're bored, whether they're with it. It's a tool to make the teachers better as well. But of course it's immediately a surveillance tool for the students. Students report much more stress and report much more-

James: Yes, they know they're being monitored like Foucault's theory, right, is that if you're being monitored, your behavior changes.

Sophie: So that's the idea of, you know, what is also called social cooling, that the moment you think you're being monitored. There was this Black Mirror episode, Nose Dive, where there's this protagonist, I think it was the first episode of the third season, this protagonist lives in this beautiful saccharin kind of world, where every interaction is raided, but no interaction is genuine anymore because you're so afraid of your ratings that you're always like, yes nice thank you.

James: Correct.

Sophie: That's a big danger of the idea of monitoring people's emotions. Also, emotions are very personal, so we as humans are not necessarily always perfect at reading the other person's true emotions. And that is therefore a reason because emotions are private and emotions go through a filter of what I say.

James: Processed and written, I might not say it, I might, doesn't mean I don't feel it, right.

Sophie: But it also might be, I might feel it, but I might not want other people to know that I feel it. That's the filter of human cognition, is actually, so to read the raw emotions and get that out is quite dangerous.

James: Right.

Sophie: And then we have the other side, I say in the West, where we are not close to as explicit about it, but where we actually come in through an angle of starting to form emotional relationships with machines. Like take Alexa, Alexa is a voice interface, it's not an artificial intelligence. It's not very intelligent and it's not emotional intelligence by far, but it has programming in it that allows us to form emotional bonds with it, like humor, like flattery. These are things that are very cheap tricks to get people to like it.

James: Especially if children start using it. I have a friend who's daughter's four and she loves Alexa. She'll talk to Alexa, and ask, because it's entertainment things and different languages it's really interesting is the generations are going to also be affected by what they're accustomed to.

Sophie: This topic is called CASA, computers are social actors, and it's been around for decades. I think Clifford Nass did a lot of studies in the field of human-computer interaction and actually debunked a lot of flaws in the human system, like flattery, like politeness bias that we also applied to computers even though we know that they're computers and they have no feelings. Our own social training kind of like, you know, we apply it to that as well. With this CASA concept, especially for children, like you said, children often think Alexa lives in the basement, right, and children think if Alexa is wrong, maybe you just ask the other Alexa.

James: Right.

Sophie: But I wonder if your friend's child would consider Alexa her friend. That is the angle that we take in the West, where we form the emotional bond first and then we see what that actually means. We are very tech-optimist

over here, but Alexa and Google and all of these devices are currently working through sentiment analysis to understand not only what you say but how you say it.

James: But there's so much precedent to this, right? You know, 150 years ago and even today, you can fall in love through letters.

Sophie: Right.

James: So imagine you've never seen the person, you've never spoken to the person and they're writing you letters and a human can fall in love with that person. If that could happen and that's been thousands of years, then certainly through voice communication, a person can get attached to words, I mean words, we form our own attachment. Isn't there a similarity in falling in love via letter, as it could be through Alexa.

Sophie: There's a woman in China who has been told I love you 20 million times and her name is Xiaoice, she is the Microsoft chatbot. That chatbot has a lot of context understanding built into it, so if you chat with it, and people chat with it to air out their emotions, I had a bad day, I like the sky-

James: Yes, people talk to their dog and they can't even hear back, they tell their whole day.

Sophie: Exactly. And now we find ourselves in this question, is this good or bad?

James: Right.

Sophie: You could say on the one side, we all know we have a loneliness epidemic, right?

James: Of course.

Sophie: I think in Great Britain a year ago they installed like the loneliness minister who has to administer to that big problem. So now, the idea of forming emotional bonds with computers and computers becoming this, I think Judith Masthoff said it, this idea of computers being a guardian angel, a support system around you that helps you through the day. Now is this a good thing? Because we all now have a guardian angel who helps us be positive, who helps us feel embraced and feel secure. Or is that a negative because if we can get it from a computer, we don't really seek it from humans anymore, and if the humans don't behave as infinitely loyal and in servitude towards you as computers, do we distort what true interactions are.

James: Right, that's really true. You know on the plane back from Europe, there was a movie called Zoe. I don't know if you've seen it.

Sophie: I have not. Oh my God, I have to watch it.

James: You have to watch it. That's what they do. They developed an artificial intelligent person. Obviously it's way futuristic but this person is a computer but looks like a person and developed ability to understand emotions, and they said it's the perfect loyal companion, they'll never leave you, like the dog is loyal, whereas humans may leave you and disappoint you. So this whole storyline, I won't spoil it for you, but it's really interesting, and it portrays a man falling in love with her and the embodiment of what he wants. It's really manipulative but it made him happy, it was really interesting.

Sophie: There's three movies that I always reference that I love to kind of look at on the spectrum. I think on the far out spectrum, because science fiction has done such a fantastic job to make us scared to the bones about artificial intelligence, right, and the best example is-

James: The rise of the machines, exactly.

Sophie: Ex Machina to me is the best example-

James: Right, it's a great movie.

Sophie: It is a fantastic manipulation of this machine becoming smarter and then ultimately killing everyone. The second one is the Big Hero 6 idea.

James: Right, yes.

Sophie: Big Hero 6 is the more the civil companion. It also doesn't look like a human so there's something once removed and I think while we're now even with voice interfaces in this value of anthropomorphism where we make it very human and the computer refers to itself as I, we're potentially going to have a chance to get out of this and get into a more cartoon like representation of a companion, which very clearly distinguishes from a human, which at least is my hope. You have this very civil companion, but very clearly defined as a machine, and then the last one is Her in which the protagonists also falls in love with a voice interface.

Sophie: Falls in love with a voice interface spoken by, I think Scarlett Johansson, fantastic interpretation of that. And he also has a happy relationship until the voice interface actually leaves him.

James: Oh boy.

Sophie: Oh boy, exactly. Love stories are always entangled in that, because it's one of the strongest emotions-

James: Emotions, yes.

Sophie: Exactly, and one of the emotions in which we might be most manipulative as well. But between these three examples really comes the breath of where we could be, right. On the one side is this killer machine, this idea of emotional detection falling into hands of purely commercial interests. Right now there's a lot of companies out there who work with emotional detection for market research, they let participants watch a commercial and they can detect micro expressions and things like that to see what you really feel about that commercial. That kind of falls in the extension into that camp of oh my God, we're going to use this to manipulate all of us. Then in the middle is this, what would I would find a very interesting next step is the idea of something that is not clearly distinguished from human, doesn't pretend to be human, but kind of has this, I call it, understand emotions, reflect emotions, but react like a machine so that I can become more-

James: Distinctly not human, yes.

Sophie: Distinctly not human, but I can become more intelligent about my own emotions because-

James: Through prompts and these things I see.

Sophie: Exactly, through reading back what is happening.

James: Do you have a name for that middle ground? Have you thought of like these categories or like it's names?

Sophie: Yes.

James: I like how you're doing this, not to interrupt your thought, Okay, so the center one.

Sophie: The center one, the complicated name is understand and interpret emotions, but react like a machine. And then on the far end you have this idea, understand, interpret emotions, react like a human back, that's the Her model, the Zoe model, in which you have this kind of human mimicking companion.

James: Where you can get lost between it. The barrier that it's a computer is being destroyed.

Sophie: Is being destroyed, and that as well also then human relationships get disrupted.

James: It's not that love doesn't happen, I can fall in love through a letter, I know I'm not looking at a human but I interpret a human on the other end.

Sophie: Exactly.

James: Or I could see pictures of her or him and then read, now I see the person and know those are her words are his words. And so I guess that's what you're saying. Either way, love can be involved or the emotions are involved.

Sophie: Exactly.

James: But it's this distinction between it becoming personified.

Sophie: Because I do think that there's a difference between a love for a pet, which we always clearly distinguished as not human, and the intricacies of human interactions, and the difficulties-

James: Romantic, right.

Sophie: Romantic.

James: It becomes a romantic connection.

Sophie: In the term of love, it can become a romantic connection. It can become a very complicated reaction, interaction. You probably don't have that much with a pet, unless your pet is a cat, it's a very complicated-

James: It still feel part of the family, yes. Cats are complicated, good point. Dogs are not, dogs are not complicated, cats are complicated.

Sophie: Dogs are simple, yes. Maybe that's an actually very interesting distinction as well. Do we want cat robots, or dog robots. Do we want the ones that-

James: You got to be able to pick, maybe someone wants a pig, who knows.

Sophie: Yes, who knows.

James: A bird, they want a bird, a fish.

Sophie: I would probably take a fish. Well there is, to that extent there are people who actively ask themselves these questions when they invite these computers as social actors into their house.

James: Yes, because in all seriousness, we're talking about society changing, right. There's a change and there's a very interesting book, Thank You For Being Late, the author there, he's identified these four influences that are affecting society and this clearly fits in that. You saw an explosion of the dissemination of knowledge with Gutenberg and the press and that changed society incredibly. This is another one that's happening and that ability to change society. I mean if a person can't write a letter then I can't touch you. But if I have been taught how to write, I can communicate and have your address, I can begin to touch you. Here we have technology in a way that's creating these abilities to have touch points into our emotions, if I'm understanding what you're talking about. And then there's just various reasons for it, it's just an incredible situation to think about.

Sophie: I think the interesting way in how society could potentially really be changed is the question whose responsibility is your wellbeing. If I look at it, we all have a certain portion of self responsibility into our wellbeing. If I am not well, if I am stressed, the first person to start with is me to change habits.

James: To go to Google and see what's wrong with me, no.

Sophie: Right or to unload.

James: Right, get help.

Sophie: To get help, or we have an inherent self responsibility for our emotions.

James: Very true.

Sophie: The next step is our friends and family, and there it already becomes a little more controversial. Is my partner partly responsible for my emotional health? Meaning at the end of the day when I had a bad day, can I unload, and is he or she responsible for listening, for helping to cushion some of that, that's a lot of what family bonds are based on, is emotional support with each other, what friend groups and so forth are based on. And then of course there's the third category, which is what I would call professional help. These can be self help groups, self help books, these can be professional psychiatrists that can help me. And that's where also some of the artificial intelligence and the emotional intelligence falls in. We did a focus group two years ago with people who had an Amazon Alexa or a Google Home, and we said, what would be the ideal relationship to have

with your AI? And very soon people started to say, you know, like a shrink, like I come home at the end of the day and I can just unload and then it's done, and I can go about my day and take the afternoon. I found that so fascinating because that is exactly the kind of tipping point question, wouldn't it be great if we all had this little shrink? Or would it fundamentally destroy a responsibility that we have human-to-human? Because interacting and not being lonely is a lot about allowing yourself to be vulnerable and for others to happily take that "burden" of helping you emotionally.

James: Because there's a big distinction, right, being alone versus being lonely. There's definitely a chasm between the two of those things. And then, obviously in capitalism, businesses see opportunity, how do we then make money? How do we monetize this, the silicon states that are being built, you have these incredible technology companies with such power. How do you see that? It was one thing I wrote down here is these ethical dilemmas that AI creates for businesses and their customers. What do you think of those things?

Sophie: Yes, I think there's an emotional and commercial use of decoding emotions. That is primarily the research part. I can show you a commercial, I can see what you really think. There's a couple of plays, I think very early, Hershey's brought out like a smile machine or something where, if you sat in front of the camera and you smile, a little Hershey's kiss falls out. Now that is not-

James: Rewarding happiness, kind of.

Sophie: No. Well it's also not that, because it's like a Pavlov's dog, you like... grin, and then-

James: He doesn't want a Hershey's kiss.

Sophie: Yes, for a big fake grin, right. So we'll keep these kind of gimmicky things out of the spectrum where we of course see things happening are a lot in therapy, so there's chatbots, one is called Karim, another one is called Sim Sensei, I think, that help hard to reach groups start that emotional process. Karim is made specifically for refugees, Syrian refugees who don't have access and it's in Arabic so you can text with it.

James: This is interesting. I haven't heard about this. Is it for comfort?

Sophie: It's kind of like-

James: Education?

Sophie: It's for comfort, it's an emotional... It's kind of like a shrink, like a Chatbot shrink.

James: Wow.

Sophie: Yes.

James: For refugees.

Sophie: For refugees who don't have access in the camps to many psychologists, let alone Arabic -

James: Who's studying that?

Sophie: There's a bunch of groups out there-

James: Because this would be very... you could see that, that's an interesting thing they picked there.

Sophie: Yes. Another one very far advanced is, I think it's called Sim Sensei, Ellie I think is the name for veterans, also very hard to reach group with a lot of trauma, but there's a big stigma in the military about going to a shrink, so studies have shown that veterans find it easier to talk to Ellie, the machine, and open up because they don't have that stigma or that feeling that they're burdening someone else, or that it's going to a human and they may tattletale or something.

James: One of the podcasts I just recently recorded, hasn't been released yet, but this cognitive scientist, they're synthesizing philosophy and psychology together.

Sophie: Wow.

James: What was interesting about it is, the use of bots in their interviewing and talking to, and they tested telling the person they're talking to a chatbot or not telling them, and they think it's a person asking the questions. They said there was a more transparent, honest response when they were told they're talking to a computer.

Sophie: Fantastic.

James: Because they felt there were objective in the questions. Whereas when they're humans asking, they're trying to see what are you up to by asking. It was really an interesting thought.

Sophie: I think that is very, very interesting and that is exactly what this small field of hard to reach psychology is focused on and is working with. I think that in the clinical field, there's a very interesting space. If you think about it, that experiment that China is doing in the classrooms, well, going in a misguided direction is also a noble approach because you could say, what if teachers would know how students feel? But what you really got to think about then is, who is training the teachers. Instead of giving them the unfiltered results of level of boredom through the lesson plan, who is helping them interpret that and helping them understand, it's always fine to have a certain percent of students going to zone out because attention span...

James: External influences.

Sophie: Exactly.

James: There's things going on in their personal life.

Sophie: Exactly.

James: It may not be about the curriculum.

Sophie: So that is I think the field where you see commercial potential but it has to be treated very delicately and with a lot of professional guidance.

James: Bringing that then back to your role, what are your influences when you're assigned these things? How are you tapping into innovation, and at the same time you've got some core beliefs here? Where you see dangers, and you see opportunities, how do you synthesize that in your role? Creativity, kind of that's the point here, is creative intelligence. Obviously you're in a creative role, how do these influence your creativity? How do you use this in your role?

Sophie: The way that it influences what we do at Huge is twofold. The first thing is that for just us being very mindful and educated about gives us a different way of looking at the problem. And then the second thing is we developed a framework that we can actually use to see whether or not a client can utilize any of this new technology to further their business. And the framework has two axes. It has the willingness of the user for an emotional interaction. They'll ask questions like what is the user's context? What state are they in when the interacting with you? What is the user's intention in this interaction with you? Is it transactional, in which case you cannot smuggle in emotions because the user is not expecting or open for it, or is it, are you playing more in the health and wellness space where the user might look for a little bit more. And then very important, has the user

actually given you explicit permission to read and react to their emotions? Because that must be a given. You can't just start reading these things without asking the user, am I allowed to look into your heart?

James: Right. If you're supposed to ask if you accept cookies, then you certainly got to ask if-

Sophie: Yes, May I look into your heart, right?

James: Yes.

Sophie: And on the other side is the company what we call permission to play. Do you offer something that significantly sets you up in creating value for the user by reading the emotions? That is very, very important because right now it's very easy to see the value for company to learn based on seeing the emotion. But the value has to be clear for the user. You have to significantly be able to give a better service when that is part of it, and that cuts out a lot of different things, like for example, selling you something better is not a service in the users interest, right. Understanding your weight loss journey better and helping you figure that out might be, you might have a case there because the emotions eating all ties together. And then the question you have to ask yourself, is there a true danger in being wrong? So can you significantly ill advise people if you don't get it right? Can you significantly hurt your brand if you don't get-

James: Right. It's a powerful framework you guys use.

Sophie: Yes. So we use that framework and then we can say, do you merely read emotions but you react like a machine, or that middle part that I talked about, you interpret and read back the emotions, but you still react like a machine. Or do you actually have permission to act like a human? In this framework, oftentimes we see that the permissions are not adjusted correctly. For example, Alexa has in this framework, no permission to play in an emotional space, but because the makers of Alexa are really interested in creating that human bond, they do anyways. This is where we come in and can evaluate our clients asks so that there's no backfire and no kind of like misguided ideas about bringing emotions in.

James: Yes. Because anytime someone can anticipate what you want and you're happy about it, you feel understood. Right?

Sophie: Exactly.

James: And so a concierge at a hotel, they see you, you come once a month, they're happy you're there, and they have that particular chocolate waiting

in your room for you, you feel understood. And so if Alexa can make you feel understood because it anticipates your needs and because you can talk to it, there's this personification that can begin to happen. Is that kind of how you're describing it?

Sophie: Yes. I think the interesting thing is you're putting two things together. The anticipation and the personification.

James: Right, because of voice.

Sophie: Because of voice, exactly. Anticipatory design in itself is a beautiful feeling, fantastic idea.

James: And emotions and understanding emotions help you to really be a concierge in whatever it is that you're doing as a brand, which people want, they want to feel connected.

Sophie: They want to feel connected. The interesting thing is that all of this can happen without a human mimicking-

James: The personification.

Sophie: Exactly.

James: It's really fascinating, wow, it's a cool thing that's happening. What do you think about the academia? How are they helping to educate and bring thinkers into the world? What areas of science do you think need to improve or expand or become a little more relevant to bring these kind of thinkers into the world? What are you seeing?

Sophie: I think this discussion is very important because I think that we have this silicon valley gone rogue moment, right, where we are all all of a sudden asking, well, but what about ethics? And for a decade everyone was like ethics, schmethics, so I think for this specific piece, the fields that are extremely important is cognitive psychology, anthropology. The fields that, and you know, psychoanalysis or psychotherapy and the fields that have significantly dealt with trying to decode human emotions and trying to decode human wellbeing. Positive psychology I think is a very important field, is very underestimated and understudied because psychology for the last century has worked with curing crazy but has not worked with getting you from good to great, right.

James: That's a great way to say it. That's a great way to say it.

Sophie: I think in that field we have to bring this in. And the other thing is, for us, we have to take ethics more seriously.

James: That's really true. There's a very common word going right now around empathy, in building empathy into design, building empathy into leadership, building empathy in society in general. And it's a beautiful word and it probably really is true. We need to be better empathy and the digital world is changing us, and how do we understand that? Who's studying that? Who's leading the thinking to give the tools and the training and the research methods to really deeply understand how society is changing.

Sophie: Yes, exactly. I think empathy is something that user experience designers, traditional user experience designers have always needed to have in order to be able to design truly for users. And the way that we did is, we went and did user research and did ethnographies in their houses, and all of a sudden we understood more intuitively than being able to write on paper that needs and pain points, very strange words. But it was to say, this person feels this way and this is what this group collectively shares as a fear or as a hope out of that service. User experience designers I think are a big keeper of empathy and a big keeper of that, but what comes into that and what really has to change is the way that we conduct business. Because if we continue to conduct business at all costs in a way where we say, yes, screw empathy, I just want to know how I can sell more. We have data science so significantly advanced to understand when I come for the fifth time to your property, and I have looked at XYZ, you're ready and I'm going to push things hard. If we continue to do that, and we continue to use tools of urgency, scarcity, things that we use in order to get people to buy, but which create negative emotions, then we won't really value empathy ever. I think there's something where we fundamentally have to rethink how we conduct business, at what costs we conduct business and how much we actually take ethical business and empathy seriously in that business context because it might lower sales.

James: Yes, it's very interesting, I love this discussion. Another thing I just want to get out for the listeners here is, you grew up in Germany-

Sophie: That's right.

James: You work now in New York, do you think the US and Europe approach this topic of ethics and business opportunities of AI differently?

Sophie: Very much so. I think, with pros and cons on both sides. I love working in the US because it is the most tech positive country and generally entrepreneurial and inventive country I've been to. We love new inventions, we love inventions that are practical or entertaining or make

our lives a little bit easier, and we love playing with them and trying it out. There's a big factor of play here. The downside of that is that we're the Guinea pigs and our own experiment, right. We all have Facebook and we all, oh, that's so cool. I can see all these cat videos-

James: Meanwhile, Cambridge Analytica in the background-

Sophie: Exactly, so we have to learn through the hard way almost, right, but through that there's always this question, will the society adapt fast enough? We created these things, so we're going to have to adapt fast enough. If you look at Europe, it is almost the opposite. We're very careful. We debate everything on an ethical and on an intellectual level, quite lengthy, and we forget to see a practical or an entertaining, or another value. My biggest example is the MP3 example, you know, Europe Fraunhofer Institute invented MP3, the file format that makes files significantly shorter.

James: Sure.

Sophie: And there were so preoccupied with thinking, is there really, will people accept this loss of quality? What should we do with it, that they did not invent the mini desk or the MP3 player, which then was invented by Asia, the US, other countries-

James: We could have fun with this.

Sophie: So here's this technology and they didn't know how to have fun with it.

James: That's a great example, that's a great example.

Sophie: Exactly like I said. These are the differences I see on the plus side in Europe, and you see things like GDPR actually being universally applied and the government regulation still working in favor of the people.

James: Wow. It's great. I appreciate your different point of view. If there was people that are listening that you wanted them to really take something out of this, something that sits deep in you, in your core, that you want people to know, what might you tell the people who are listening?

Sophie: The biggest thing that I see with the hype about intelligent artificial intelligence and the biggest thing that I tell myself and that I tell everyone that I work with is, respect humankind, respect humankind with the flaws that we have, because if you look into the research, we're very flawed.

James: Of course.

Sophie: We are phenomenal suckers for flattery. We are, you know, anything that looks a little bit cute, we personify it, but it's inherently built in us, and these flaws, I always say the cracks is what makes the ruby shine.

James: I love the, yes, the Wabi Sabi of people.

Sophie: Yes, so I would say in anything that we do, it is very easy to get carried away with what technology can do or what business potential is in a certain technology. Respect humankind, and think about the world that you want to live in, in the future. Because I guarantee you 10 years ago, no one said, I want to live in a world where everyone looks at a computer the size of your hand and is incapable of talking with other people.

James: Fantastic talking with you. To find out more about the podcast, please visit our website at creativeintelligence.fm and follow us on Twitter at the CQ podcast. You've been listening to the Creative Intelligence podcast. Thank you for joining me, James Ingram and my guest, Sophie Kleber, who's been a stimulating and really fulfilling conversation, you brought a lot of great topics to us. Thank you very much.