Gloria Mark: We carried around stopwatches, and we timed every single activity that people did to the second.

Tristan Harris: That's Gloria Mark. Back in 2004, she convinced a random sample of office workers to essentially ignore the clicking of her stopwatch as she timed their every move.

Gloria Mark: They turned to their email. That would be start time. Click on the stopwatch. Then they'd turn away from email. That would be stop time. Click on the stopwatch. We recorded all these things, so we could be as precise as possible.

Tristan Harris: Precision mattered because Gloria wanted to know exactly what people meant by the word multitasking. Remember, this was the early 2000s at the height of the multitasking craze, but it was a totally vague concept. I mean, just how many tasks did the average worker juggle? What is a task? It was anybody's guess until Gloria and her colleagues answered the question with scientific precision.

Gloria Mark: And we found that people switched actions about every three minutes. That's not just what they're doing on the computer, but what they're doing on the phone and interacting with people. At the time, this was 2004, people were shocked that it was three minutes. They thought that was a very short amount of time.

Tristan Harris: Three minutes of uninterrupted attention by today's standards is remarkably long. I mean, it's luxurious.

Gloria Mark: The most recent statistic we have is back from 2016 where people's attention on their computer for any screen, the median length was about 40 seconds.

Tristan Harris: 40 seconds before your attention breaks. It takes an act of extreme self-awareness to even notice all of these hairline fractures. When our attention breaks so chronically and so pervasively, we're not even noticing the full toll that it takes on us. We need a researcher like Gloria Mark with her stopwatch to measure the problem with precision. Over the past 15 years, she's created a whole new set of methods to trace our cursor movements and our eyes and even our heartbeats as we work.

Tristan Harris: On today's show, Gloria Mark, a professor of informatics at the University of California at Irvine will share her latest findings from the science of interruptions. The symptoms are shocking, but they shouldn't be. I mean, we're all experiencing it, and for the sake of our sanity, we have to stop pardoning the interruptions. I'm Tristan Harris.

Aza Raskin: And I'm Aza Raskin. This is Your Undivided Attention.

Aza Raskin: We're surrounded by distractions and yet they're invisible to us. I want to know how did you start noticing this thing we can't notice.

Gloria Mark: The trigger was a cultural change that I went through. Whenever I do research it's always inspired by some kind of personal experience. I moved in the year 2000 from Germany where I had been living for some time back to the US. When I was in Germany, there was a common practice that you would go out to lunch with your colleagues, and then we would take a walk around this campus. It was a beautiful campus. It's called a round. You'd just take a round. Then you get back to work.

Gloria Mark: I come to the US, and it was all I could do to buy a sandwich between my classes or between classes and a meeting. Rush back to my office, and sit in front of my computer and eat my lunch. As I walked down the hall, all my colleagues with their doors open were doing exactly the same thing, because we just didn't have the time to do all these things. I really, really began to wonder to what extent do other people experience this? That's how I became interested in distractions, interruptions, multitasking.

Aza Raskin: Are there a lot of people besides you working on just measuring and seeing what's happening to our attention?

Gloria Mark: There are some researchers. I wish there were more. I find this topic to be so profound and so important. I just wish that there would be an entire field around this topic. It's not just computers though. It's just a wider spectrum across society. I was just recently looking at statistics on television viewing, and there's something called the average shot length or median shot length. I found a site that had tracked these shot lengths over the years, and it's actually quite short. It's amazing.

Gloria Mark: Actually I'm looking at this graph now, and I see that, if we're looking at average shot length, it was about 13 seconds in the 1950s and the last year they have is 2010, and it's probably about three and a half seconds.

Tristan Harris: Wow.

Gloria Mark: Similar things in films. It depends on the director. But the shot lengths also seem to be decreasing. So, we're getting bombarded from all directions. I'm not sure of the cause and effect. I'm not sure if people are being trained to have short attention spans from TV and films and then applying it to computers, or if their short attention spans have developed from computer activity, but I will say that when people go on a computer we have access to more information and more people faster than we ever have had in history. That just feeds into the natural curiosity of humans.

Tristan Harris: Was it in one of your studies you mentioned ... I know that there's probably a more recent stat now, but how many hours information workers spend in their email?

Gloria Mark: People average about 74 times a day checking their email, but each time they check their email, they spend about 32 seconds on average. You could imagine all these interruptions that are happening throughout the day, checking the

email and spending this amount of time, and then having to reorient back to work. I remember the high person in our sample checked it 435 a day.

Tristan Harris: Wow.

Aza Raskin: Oh my god. Wow. I'm really curious. What happens in that moment that you get distracted, or you self-interrupt. You go to your email. What does the process look like to get back to what you were doing?

Gloria Mark: Well, people have to cognitively reorient where they were, and this is an extra cognitive load because you have to recall, for example, where you were if you're working on a document. What was your train of thought before you got interrupted, and I want to mention one thing that I think is very relevant. We looked at types of interruptions, and we tend to think of interruptions as only coming from external identifiable sources like email notifications, or social media notifications, but about half of all interruptions are due to one self. We call these self interruptions.

Tristan Harris: Half of interruptions are coming from the inside.

Gloria Mark: From the inside, so the way to explain it is that you're observing someone and they're typing in a Word document, and then for no explainable reason, they suddenly stop and they check email, or they stop and they pick up their phone, or they stop and they just look up something on the web, which may or may not be related to what they're doing.

Tristan Harris: I found this part of your research on self interruptions profound, because you have a theory about how these external interruptions beget internal or self interruptions.

Gloria Mark: Yes. We had looked at the data, and we divided the data into hourly segments. We had collected a fair amount of people because we're tracking them over multiple days and the frequency of what we call external interruptions. That's from say, email notifications, some external source, and we looked at the frequency of what we call self interruptions. We find that when the external interruption frequency wanes, its very interesting. The internal interruptions tend to kick in. It's as though people are just habituated to being interrupted. To having these short attention spans, and if the interruption is not coming from some external source, then people self interrupt.

Aza Raskin: One of your studies you cut off information workers from email for five days. What happened?

Gloria Mark: Yes. We did. We had people walking around the office wearing heart rate monitors. We measured them for a week, and we got their average stress experience and the next week, email was cut off, and when email was cut off, people because significantly less stressed and focused significantly longer. The flip side of focus is looking at switching between screens, and people switched about half as frequently as they did with email. One might think, "Oh yeah, you

take away email. Of course, you're going to switch less." Not necessarily because email is just one source of switching.

Gloria Mark: The way I interpret this is that people have this habit of checking email. If that stimulus is removed, the email is removed, people can slowly change their habits. Maybe they're not going to switch other screens as fast either.

Aza Raskin: One of the things that strikes me is you told this story, is that, we are all dosing ourselves with email so what's happening in that office is happening the entire world over. Not only just to information workers, but our political leaders, our scientists. The people doing the most important thinking. I know it's hard to do an extrapolation, but I would love to know just what do you take away from this study? From the specific to the general?

Gloria Mark: Yeah, I see it as a trap. It's like a spider's web that's very sticky. We're all interdependent in this web of communication, which is email. If any individual were to pull out and say, "I'm not going to check my email that often." They're going to be penalized. I'm thinking especially in the workplace. They have to be on top of things. This is just generating more and more email traffic, and email has become a symbol of work. That's another reason why when we think about email, we become stressed.

Tristan Harris: Hey, this is Tristan. I want to pause the interview here on this sticky, tangled web of our incessant communications. Silicon Valley product designers can hack our way out of this mess, and Aza and I discuss a few simple solutions, some of which already exist. They just haven't scaled yet.

Tristan Harris: I downloaded an app called Quiter, which basically realizes that when people leave their email open in the background, which most people do. They just end up switching to it all the time, and one of the easiest things you can do is just make sure you quit your email so it's not actually open so often.

Tristan Harris: What Quitter does is it lets you set up, "Here are the apps on my Mac." Whether it's Slack, or email, or messaging, that it just automatically hides them on a timer, so after five minutes it can either automatically hide them, or automatically quit them. That's great, but no one's ever heard of this thing called a Quitter, and imagine that that's built into the way operating systems work.

Tristan Harris: Another example is full screen mode. Not too many people, I bet, use the full screen button on reading an article, or writing something in Google Docs, but I've found that it's super helpful if you go full screen on something. Aza, I remember you used to even set up two different computers, side-by-side.

Aza Raskin: Yup, and I still do that. I don't have Slack or other communication on my big work computer, my desktop computer, and I only do communication on my iPad, so that I have clean separation of space and mind, so I can't spin out that way.

Tristan Harris: Our attention just isn't just going into the screen. It's also being occupied when we're off the screen and we're worried about missing that email that I know is going to come in, and if I miss it, what's going to happen. Imagine that this mandate for every company is, attention minimization. I'm not just minimizing people's attention on the screen, I'm also thinking about genuinely how am I occupying attentional footprints in their mind off the screen?

Tristan Harris: A simple example is imagine if every messaging communication app lets you say, "This is something I want to say, but send it later. Send it tomorrow, send it in five minutes. Send it in an hour." Because if I have that thought and I know I don't want to mess with Aza's attention right now, I sometimes hold onto that thought because I realize, "Oh, that's not the right place to send it."

Tristan Harris: Another good idea is rerouting. What dictates whether or not I'm going to message you, Aza, with Facebook Messenger, or with WhatsApp, or with iMessage. Am I going to think consciously of, "Oh this isn't that urgent. Let me just email you Aza instead of sending you a text." Well in the ideal world that's what I would do, but in a messy, busy, distracted world where I'm not going to think hard about it, if I'm already in Facebook and I see something and I want to send it to you, I'm probably going to use Facebook Messenger because that's the closest thing to reach for.

Tristan Harris: Imagine if all messaging apps had this rerouting mechanism where when you start an email, it's very easy to reroute to WhatsApp, or it's very easy to reroute to iMessage, and when you start an iMessage, it's really easy to reroute to email, because right now that's hard and especially when we don't distinguish between things that genuinely are urgent that are worth interrupting for versus things that are not. That's a huge issue.

Tristan Harris: If we can get just a few designers in the room with the simple mandate to minimize user engagement, and to maximize the attention on the things that we actually care about, then the ideas will grow exponentially. You can help us think bigger by joining the Center for Humane Technology's next video conference. Video humanetech.com/podcast to sign up and join the conversation.

Tristan Harris: I have some stats here in front of me from Rescue Time. Rescue Time is a product that people install on their desktop. It tracks basically your usage across different apps and gives you charts and graphs and does that across devices. They tracked that 40% of productive time at work is spent multitasking. Only about an hour and 12 minutes of uninterrupted productive time per day. 70% of all emails received were opened within six seconds of their receipt. When you check an email, it takes an average of 64 seconds to resume an original task.

Tristan Harris: Another study found that when email involved doing something outside your inbox, it takes over nine minutes to return to your original task, and a lot of these studies were done before the age of Slack, and before the age of-

Gloria Mark: Yes, I'm not surprised at all by those statistics. That's what I would expect. Also, these stats about the amount of time that it takes to get back to a task after you

do email, I'm not surprised at that either because we found that when people were interrupted, it took them about 25 and a half minutes to get back to the original task, but the reason is, we're looking in a different kind of granularity. We're looking at the level of project. We had clustered smaller activities into a cohesive, cognitive theme that we call a project, and so you get interrupted. You work on another project, and then it turns out you work on another project, and then you go back to your original task.

Gloria Mark: I think what's happening with when you talk about these gaps, I think you said nine minutes to reorient back, people are doing intervening things, and so these intervening things are making it even harder for them to reorient back to that original task before they got interrupted. It's their focus keeps shifting.

Aza Raskin: That 25 and a half minute status also, that's mind blowing just putting into context. You just typed it out, I think that's 2.5% of your waking day is trying to return back to the task you got interrupted from.

Gloria Mark: Yeah, well but people are doing things during that 25 and a half minutes, and they're doing things that are distracting them from that original task.

Tristan Harris: When I was thinking about these things years ago when I first met you, one of the things that concerned me wasn't just the present state of affairs in 2013. I felt like you did, Gloria, that when you came back to the US from Germany and that slow clock rate lifestyle, and then moving to the hyper fast, squeeze your lunch in clock rate lifestyle, that I was getting a sneak preview of the future.

Tristan Harris: When I landed at Google in 2012, this was the first time I had worked at a company that big that had just boat loads of email coming in every single day. Just an insane barrage of information. Then I was also in the bleeding edge of using a lot of the early social media apps because a lot of my friends were making them, and I saw as this tech environment in San Francisco, it was just peak ... It was the worst. It was almost like hitting peak oil and saying, "Oh my God, what are we going to do?" And then people started fracking for attention. Realizing, "Hey, we could actually double the size of the attention economy by getting you to pay attention to two things at once. Then we get you to pay attention to four things at once, and we can sell all that attention as if it's the same price to more advertisers and quadruple the size of the attention economy." I'm just curious, as you've been working on this for more than a decade now, how do you see the trends of where this is going?

Gloria Mark: I am hopeful that we will find solutions, because we just can't continue at this rate. I just don't believe so. Stress is just increasing. It's not just acute stress, but it's cumulative, chronic stress, and so we have to think how we're going to break these habits, and it's going to have to be a partnership with technology companies as well.

Tristan Harris: It seems like there's this missing piece that if we're so damn sophisticated, and we're so damn good at building great advanced tech, why is it that we're overloaded? We can hardly think. The quality of our public discourse is going

down. It says to me that we're missing something, which is that we have these paleolithic, primitive brains. We feel intrinsically as an evolutionary instinct we have to get back to those people. Or back to the email example, your boss sends an email to you and your peers who work underneath that boss, and you see one of your coworkers get back to that boss in less than two minutes, what does that do to everybody else whose sitting there?

Aza Raskin: Yeah, this is social signaling and social obligation times slot machine mechanics.

Tristan Harris: Right, you're adding all of that into one cocktail, and then now you jack that into the back of a human being for 80 times a day, or the 74 times a day you said you mention people check their email, and you say, "Oh my God, this is like a psychological outbreak." We've epidemiologically jacked in all these people without even knowing what we've done to ourselves, and we didn't make it safe first before we started spreading this all over the world.

Tristan Harris: I'm just curious hearing all that and given how long you've worked on this, how much have you seen companies improve the situation, and to what extent if they haven't done that, why aren't more things happening to protect our finite limits of our attention in our minds?

Gloria Mark: I totally agree with you Tristan that technology is not fitting our practices. I mean we are still in the Wild West of technology development and there's not enough attention given to what human practices, and human cognitive resources are, and that's because technology has just been developed like mad without really thinking about how it fits to human beings. Without really doing what's called user centered design.

Tristan Harris: We have a lot of designers in technology companies who listen to this podcast. I don't think anyone inside of Google or Facebook would say that their goal is not to do user centered designed, and yet there's this thing where we still haven't gotten it right. We can segment between two different components of this. There's clearly the incentivized attention economy. Scooping attention scoop after scoop out of our brains, because that's the business model, the stock price is hooked up to it. You can't tell YouTube to stop doing it. That's one thing.

Tristan Harris: But then there's this other part. Our email and text messaging. Gmail does not just want to rake in the cash and pump up the stock price by just making people stressed and burnt out on email every day. They don't want to do that. iMessage doesn't want to do this with text messages. WhatsApp doesn't want to do this with WhatsApp. Why haven't for these neutral communication products? There could be just this design renaissance. What do you think those designers of those products, the neutral ones, the ones that are communication products especially, that they need to hear or understand?

Gloria Mark: I believe that they're just trying to think about very short term kinds of goals. How can we design a technology so that it's user friendly, but the deeper, farther reaching goals are things like the user should have agency and control over their actions. The user should have a choice whether to participate. There

needs to be a very deep understanding into the psyche and the behavioral practices of people, not just in a laboratory setting where a lot of user centered design gets done, but look at people in the course of their daily lives how their using technology.

Gloria Mark: Another thing is that, and gosh we've known this in psychology for many, many years that there are individual differences and one size does not fit all and so we've tested interventions and they tend to have this premise that it's one size fit all and it turns out that there are some people who actually are pretty good at self regulating. If those people, maybe they just want a little bit of self regulation, or they want to be able to regulate distractions in certain contexts, but not in all contexts. But using a lot of these interventions actually harms people who have good self regulation ability. It actually increases their cognitive load because they're already pretty good at knowing when to take breaks and when to get back on track, but the flip side is there are a lot of people that are just very susceptible to distractions that don't have this ability to self regulate and they do need support.

Gloria Mark: User centered design needs to approach this problem in a much deeper way. What is that goal that we're after? How can technology be designed to help us reach these goals?

Aza Raskin: If you were to rewrite Facebook's or Twitter's mission statements, what would your version look like?

Gloria Mark: Well my version would be, how can we use this technology to help people do things like develop deeper relationships, better social connectedness? To be able to get better support from other individuals. How can we help people achieve a work/life balance? How can we help people achieve goals that are really important to them in life? How can we enable people to do lifelong learning, because that's what we should be able to do with technology.

Aza Raskin: One of the things we'll always hear, and I think you have the perfect purchase to talk about this is, "Okay, yeah. Those are nice, but how do you metricize those? How do we know when we're succeeding?" You would be the best person in the world actually to think about how would we know we were succeeding at doing those goals?

Gloria Mark: Well there are a number of measures that can be used. I don't think there's any single measure and I do believe that we have to look at how people are using technology in their everyday lives. We do what we call living laboratories where instead of bringing people into a closed room laboratory, we go to where people are, and then you can use different methods to try to understand to what extent people are achieving their goals. First of all, one, to try to understand what are the goals that each individual wants, and then you take a really deep dive and try to understand, is this technology inhibiting people from getting there? If it is, why? What is it about that technology?

Tristan Harris: It's Tristan again. Gloria raises a lot of intriguing questions here which are actually some pretty great design prompts. These questions would force a designer into an unfamiliar conversation with the user. I mean not just looking at their behavior, but asking them about their values and their goals. How do you do that with technology?

Tristan Harris: Take any in person community gathering. It takes work, and you can think of all that work as a pipeline. Where is this going to happen? Who's hosting it with me? Who's going to invite people? That pipeline right now is really hard. Each step has high drop off rates, and because it's so hard, people don't do it, but imagine a world where our devices strengthen that pipeline, and we go through each step as the Apple designers, as the iMessage designers, as the WhatsApp designers, and say, "Why do people find this hard and how can we make this a lot easier?"

Tristan Harris: Imagine if Facebook events wasn't this big formal thing for groups of 100 people, or 50 people, or 30 people, but was more of a lightweight thing where it was easy to negotiate these things in small group threads? And there was templates. Who's going to be cohost? Where are we going to meet? And they were clickable buttons that people could vote up and down, or say what they want to do, and provide reminders in that group chat so they're emerging between group chat and calendaring, and all the design choices were meant to instrument and strengthen that pipeline because we know that it's a harder thing to do then to simply go by yourself into a wormhole.

Tristan Harris: I think that's a whole design area, a whole design project that anyone whose working on Facebook events, or working on messaging, communication applications could easily dedicate resources to and get a huge payoff.

Tristan Harris: If you want to reimagine the choices people make as they interact with your company's products, check out the Center for Humane Technologies Design Guide. It's a one page list of questions that helps your team quickly get attuned to the vulnerabilities that we all share. You can download that worksheet at humanetech.com/designguide.

Tristan Harris: One of the challenges that comes up in the conversation about persuasive technology is when you ask people what their goals are for their life or something like that, a lot of people don't actually know their own goals. Moreover, if you take Instagram's goals, you can actually as a persuasive technologist, you can colonize the goals of the human social primate sitting in front of you. I can manufacture a goal of getting you to be addicted to getting attention from other people.

Tristan Harris: Now, if you actually ask people well what is your goal? What do you want, they say, "No, I really want more followers on Instagram. That's my goal. Can you help me with that goal?" One of the challenges is, what does it mean to ethically persuade someone when they don't have their own goals, and then you have asymmetric power to get your goals in there and I think this actually speaks to a

second part of the research, Gloria, that you've done that I've found really profound is your research on the predictability of people's personalities.

Tristan Harris: I think it's 100 Facebook likes and you can know someone's big five personality traits with different degrees of accuracy.

Aza Raskin: I think it's just 150 to know them better than I think the spouse, and 300 to know better than the person can predict themselves.

Tristan Harris: Right, but that speaks to okay, well at least that's gated by whether or not the data is safe. Like, "Well maybe we can lock up that data on Facebook likes. Maybe we can protect people's sovereignty so that no one can do that full checkmate hijacking on a human social being." But your research shows something different. What is that?

Gloria Mark: I think you're talking about a study we did where we logged people's computer and phone activity and we applied machine learning, and we looked at only temporal features of the phone and computer use. By temporal features, I mean things like, how often did they check their smartphone? How often did they check social media? Did they check it all at one time? Was it dispersed throughout the day? How routine was the pattern? What is when they started checking it at the end of day, and so we got a whole lot of different features just about these temporal factors, and found on that alone we could predict people's personality traits from the big five. The ocean traits with a fair degree of accuracy.

Aza Raskin: Wow. I think I remember seeing another paper from last year that used eye movement to predict personality traits as well, and I guess one of my takeaways was, human beings just throw off entropy. We're constantly tossing out signatures of underlying traits.

Gloria Mark: Yeah, and people are getting better and better and more creative at finding ways to discover things about people using technology. Using new inventions. Machine learning is getting better and logging tools are getting better, and people are just becoming more inventive about the kinds of data that they can use. When people go on a number of different social media platforms, what they do is just there for anyone to mine, but we really need to have better methods of preserving privacy, or sanitizing data so that we can break those kind of asymmetry of power.

Tristan Harris: Yeah, I mean I think especially when you realize as people worry about their privacy and the data that they hand over to Facebook, I mean can you tell Facebook not to collect the sequence of clicks that I'm making through the app? I mean what does it mean to not collect that? I mean, Gloria, when we met, I think we'd talked about this. I was at a lab at Stanford, the Persuasive Technology Lab and the last class was on the future of persuasive technology. We talked about this future world where you'd have a persuadeability profile for every person.

Tristan Harris: Imagine you had ... I think we actually even used the big five personality traits as one of the features just so you'd know, "Okay, this person is particularly convinced by appeals to authority, so if I say Harvard University or Stanford University says, or the Brookings Institute says that this thing is true, you in your mind would be very easily persuaded by that." But maybe you're the kind of person instead that maybe appeals to strong authority leaders. Or your friend Susan. You trust your friend Susan for everything on these specific matters. Increasingly, are we going to get worse and worse of predicting things about people? No, we're going to get better, and better, and better and increased computational power.

Tristan Harris: The interesting thing that I see about your work on two sides to link back to distraction and the predictability research which is that there's two ways to predict human beings and to make ourselves predictable. One is you simply human beings. You take them from their full, rich, dimensional complexity and all the things that they might creatively do, and all the thoughts that they might be able to have, and the rich expression of their full selves, and you say, "No, no, no. Let's just turn them into lab rats and Pavlovianly condition them to check like little predictable rats." Let's simplify your thinking. Let's simplify your clicks. Let's actually turn your tweets from big long paragraphs, or long books into here's 100 characters. Let's just make you super predictable, but then that runs out because you can only make people so simple. Let's instead build bigger and bigger super computers to predict the other side of it, which is no matter how rich, and complex, and unique you are, let's actually just use bigger, and bigger super computers to predict more and more things about you noninvasively so we don't even have to attach a sensor, which is what your second paper is about.

Tristan Harris: It's about the ability to predict people's personalities, and once we're predictable, and that predictability is hooked up to asymmetric systems with power that grows exponentially from the profits that they make that get reinvested into bigger super computers that are even better at predicting step T plus one, suddenly that's checkmate. I'm just curious what do you think of that? I mean that's a big and dangerous trend that sounds like sci-fi, but we actually find ourselves in that reality right now.

Gloria Mark: Yeah, I'm just wondering as you're speaking, you've got this one side, which is a very reductionist perspective, and the other side is a much more complex perspective on treating humans as complex beings, and I'm just wondering if at some point, people are just going to rebel and go offline, because what other option would there be? I mean if you're going online and information is being gathered about you to be able to be used for purposes that may not meet your goals, what other options are there for people?

Tristan Harris: This is why I think this is our project. Our project meaning the collective we. Not just Center for Human Technology, but we call it humane technology because the point is, as you said, the answer isn't to just unplug from everything and to go into a forest and not use any email. As you said, you can't do that. There is only one way to solve that which is to make technology in service of

humans being their more full, expressed, creative, unpredictable selves. To be sovereign.

Tristan Harris: First of all, just curious since you've studied this for such a long time on the distraction interruption side, you must be the world expert on how you have curated your attention of life. Or have you? What is it like for you, and what do you do?

Gloria Mark: I am asked this question all the time, and I am not much better than the people I study, I have to admit. I can pull back and objectively look at the problem, but it's a challenge. I am as much sucked into social media and the web and email as everybody else is. I do think though that I come from a psychology background, and in psychology we can think about automatic and controlled processing, and a lot of what we do in technology is automatic processing. Checking your smartphone, checking email, checking social media. Just surfing mindlessly on the web. These are all automatic kinds of thinking.

Gloria Mark: Now technology should not be reinforcing us to have these kinds of automatic actions and automatic thinking. Technology should be helping us to think more deliberately about what we're doing with it.

Tristan Harris: The recommendation that we need to be more deliberate I agree with, and then it goes back to this point that we should feel a dramatic need to protect the very, very, very finite amount of that deliberate, conscious, choice making creative energy that we have. If I'm giving you the ability to connect with your friends, then ... Sorry, I got a text message ironically in the middle of that, so I'm going to say that again.

Tristan Harris: Anyway, now I forgot what I was saying, and that's interesting just to see the way that, I'm, like you Gloria, have studied this topic for about close to a decade now, and my brain just ... I just lose the signal. The thing I was saying just 10 seconds before, and that's actually what is so alarming is I see us all gasping for air while the air is slowly burning out, and we're the few people trying to say we have to just fill the chamber with a ton more oxygen and totally change the incentive so that everyone's not trying to steal oxygen out of the system.

Gloria Mark: I actually think that we need to start with young people. Sometimes we'll be on public transport and I see a three year old kid playing with their parents smartphone and I'm thinking, "Oh man. That's just really bad. It's bad training because these kids are developing habits so young." But can we counteract that? Can we do something so that kids don't develop the habit, so that kids can learn resistance, and they can learn that they can get gratification from so many other things.

Gloria Mark: Studies show that taking a 20 minute walk outside can make people significantly in a better mood with more positive affect. They don't have to be on their phones for the whole time.

Tristan Harris: And to your point, Gloria, about the power of a walk. I mean the premise of this larger project that we with the Center for Humane Technology are trying to call designers into all of us making this change together is by better understanding these invisible dynamics in human nature. You just mentioned a fact which is that a 20 minute walk, as simple as that, can make a profound difference for someone's well being. Back in a talk I made, I think it was four or five years ago now, a simple change to the Google Calendar invite system, if you're inside of a corporation you use Google Calendar and it says, "Which room do you want to book?" And no one ever thinks beyond the menu. The menu is well which room do you want to book? Sounds like a pretty good menu. There's lots of rooms, we'll automatically calculate which ones are available and not already book, et cetera and the design demo-

Gloria Mark: Meet outside. You could meet outside.

Aza Raskin: Exactly.

Tristan Harris: Yeah, that's what the demo did. I had this design showing that hey imagine it let you based on the duration of the meeting that you're booking say, "Oh there's a 30 minute walking loop. There's a one hour walking loop." And it let you set those up for your company, and then boom, just like that one little change, and 10%, 15% more people are just on walking meetings more of the time, because we don't actually even want to meet in rooms, and so invisibly, because our cognition's overloaded, we're just going with the default choices, picking from menus that have been pre-chosen by some basic algorithm that's picking from a set of data objects which happen to be rooms and manage perfectly through this optimization engine, but it has nothing to do with the wellbeing ecology of a social fabric, or what makes a life well lived.

Tristan Harris: I think that's just the thing I want to end on is how do we think about this at multiple different levels at the same time. These are the kinds of things that we as designers need to train up in and it really ultimately is an education and understanding of the full stack dynamics of human nature, which is not to say that there's this complete encyclopedia and we all know it, it's that there's this thing we have to explore together.

Tristan Harris: I'm thankful to you Gloria, because that's what were so excited to examine one really important part of that stack and just really grateful for your time and being here.

Gloria Mark: It was my pleasure, and thank you for giving me the opportunity to talk about this.

Tristan Harris: Can you change something if you're not paying attention to it? Is it possible to change something without actually pointing your attention at the thing that you want to change? No, and some of the most important things we've got to change, like climate change, or inequality. They're going to require a devoted use of our attention that's sustained, that's shared. A lot of other people have to pay attention to the same things as we do at the same time, and attention isn't

just this precious resource for ourselves, it's also precious to do it together. The most precious thing about a weekend is that everyone has nothing else to do at the same time, and there's something that's extra special about attention being allocated together.

Tristan Harris: This is not some kind of inconsequential thing about being distracted at work, or feeling stressed. It's that this is the most precious finite resource that we have, and if we're going to get control over it, we have to have so much more awareness about the mechanics of what drive it to certain places.

Tristan Harris: We can develop technology that liberates our attention, and help us direct it to things we care about, or we can let it be the status quo, but then we'd be forfeiting our attention to the next incoming notification, and the next one, and the next one ad nauseam. It's up to us. Where do we want it to go?

Aza Raskin: Your Undivided Attention is produced by the Center for Humane Technology. Our executive producer is Dan Kedmey. Our associate producer is Natalie Jones. Original music and sound design by Ryan and Haze Holiday.

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