Aza:	Last week on Your Undivided Attention.
Natasha Dow Schüll:	McDonald's did not figure out how to make the perfect hamburger that would sort of exploit the weaknesses of the human organism. Someone stood and watched like, "We're going to have two hamburgers." It's a perfect A/B test, right, hamburger style at McDonald's. Where are people lining up the most? Oh, they like this burger better, and then let's iterate on that burger and iterate on that burger.
Aza:	That's Natasha Dow Schüll, an expert on the gambling industry and author of the book *Addiction By Design*, which reveals how slot machines keep gamblers in a suspended state of play that's devastating to their finances and their well-being. Last week, she described how the designers of these machines have hooked gamblers deeply into an addictive loop of small wins and small losses with the simple goal of extending their time on device. Sound familiar? That's an industry term the casinos pioneered long before Facebook. And what struck Natasha about these designers was not their brilliant insights into human nature—quite the opposite—they could hardly explain the human vulnerabilities they were exploiting.
Natasha:	If you go into the casino industry, or any of these maybe, sometimes you find it, but you don't find as much as you'd expect to, the kind of causal stories and predatory behavior. What happens, though, I think is actually more sinister, or more difficult.
Tristan Harris:	It's the banality of the evil in a way.
Natasha:	Right. It's just that the formula that gets hit upon, you don't have to understand it. It rises to the surface, and that's the product you go with. You're not even understanding what you're doing. I mean, I think that's part of your mission is to get people who are doing it to understand.
Tristan:	To understand.
Natasha:	You may not be engineering this. But if we reverse engineer it for you a little bit, maybe you'll want to not go that way.
Aza:	Does that also sound familiar? Today on the show, we'll explore how technology companies can choose a more aware path. And before you listen, please make sure you've already heard part one of our interview with Natasha.
Tristan:	I'm Tristan Harris.
Aza:	I'm Aza Raskin, and this is Your Undivided Attention.
Tristan:	First, we have to say clearly what the harms and costs are. Because I think, you know, when people look at this, they say, "What's the big deal?" I mean there's a

	hundred excuses people search for, right? The tech industry would say, "Oh, these are the people who want them. We're just giving people what they want."
Natasha:	Right.
Tristan:	Or, "It's not that bad. There's lots of places people spend time. This is just we're swapping out TV." Or, "What's the big deal? They're just losing a little bit of money. It's just that people who don't have anything else to do with their life." I mean there's this really divorced way of seeing reality. It's nothing to do with compassion or care.
Natasha:	Right.
Tristan:	The change that we're trying to see is that once you understand ... Like you said, once these mechanics are visible, we just discovered almost like the nuclear atomic bomb insight. We just discovered some fact about nature. Well now, technology and these slot machine systems, as they're describing, are discovering internal facts about human nature, instead of splitting the atom, we're splitting the human nervous system. And as we uncover more and more of the code, and that code, we don't have agency over. We're trapped inside of the functioning and the biases of our nervous system, and the ways in which it is evolved. What is the way? And this is where the ethical conversation comes in. You can't escape this. It's also being tapped into all the time to greater and lesser degrees in the built environment as you walk around. We're in New York City right now.
Natasha:	Which is one of the core observations of behavioral economics and the nudge philosophy, right? We're being nudged constantly.
Tristan:	Constantly.
Natasha:	Let's try to think about shifting choice architecture. Some people find this paternalistic. I always pushed back on that. I say, "This is happening all around us."
Tristan:	Right.
Natasha:	It's not that these people want, these humanists want to make things better in our choice architecture. There's already really bad architecture out there. We may as well become aware of it.
Tristan:	Exactly. This is an uncomfortable moral transition we need to make because, up until now, we have had this view as you know Yuval Harari always says that, the center of the universe, of our moral universe, is human choice and the responsibility of individuals, at least in the post enlightenment in a Western era. What that means is the customer is always right. Trust your feelings, trust your heart. The voter knows best. But in a world where we're reverse engineering the code to perfectly manipulate these things, and that code is getting reversed

	engineered, whether accidentally, as you said, through A/B testing, split testing, a hundred million variations that will work on the Voodoo doll-like model of you sitting inside of a YouTube server to keep you clicking for longer.
Tristan:	Or the simulations of which sort of slot machine mechanics algorithmic math should I use to keep you here longer. As we reverse engineering that code, what is the way that we get this to work? Per your point, we can't say like, "Let's take our hand off the steering wheel," and like, 'Let voters know best." that's an extreme statement but what I mean is if we-
Natasha:	Well, that's a free market. It's an extreme.
Tristan:	That's the free market view. But if we watch the free market play out right now, so if we take our hand off the steering wheel of let's say technology like-
Natasha:	Well, let's say it's already kind of off.
Tristan:	Well, it is off right now. What we're trying, I mean the whole premise of our work right now in the movement is we need a new moral framework that lets us ask what would be the compassionate good for us way of steering, shaping these systems to enhance agency, to enhance reflection instead of the curvature, the 90-degree turns. But then you get into this other thing, where do you really want to activate conscious choice-making at every microscopic moment. That's a taxing way to live. We have to actually be conserving attention. Then we ask, "So where do we want that attention and that conscious choice making, those 90-degree angles in our lives to be there? Do we want 90-degree angles for which key do you want to type? Or do you want 90-degree angles for what are we going to do about climate change or solving inequality?"
Tristan:	What is the way we want to be devoting our very limited choice-making capacity in a time of urgent challenges and when if we just let the past dictate the future, we're screwed? I think to your point about we've always had this sort of manipulative nudging-like environment. I think the analogy here is for geoengineering. People say, "Oh my God, wait. We shouldn't geoengineer." I agree there's huge risks and unintended consequences of the geoengineering. It's not like we're not geoengineering right now. We're geoengineering ourselves towards catastrophe with climate change. We already have godlike technology or we are already gods. We might as well get good at it. If we're geoengineering towards catastrophe, we might as well get conscious about our geoengineering and not do the self-destructive thing and see ourselves away from climate change.
Tristan:	When it comes to technology, if we are already reverse engineering the human psyche and getting certain outcomes and doing that in a way that leads to disempowerment, to mass social isolation, to teen mental health issues, to outrage-ification, to everyone wanting to become a celebrity, to election engineering. These are all sub-phenomena of an increasing ability to reverse engineer the human psyche. We're using it in a way that is leading towards

	catastrophe. We are now forced to become morally aware of where we want this to go. And that's an uncomfortable reality to be in because suddenly now we have to decide.
Natasha:	Right. But I would say that one of the challenges here in what you're identifying, as this kind of shift in ethical framework, is this very, very entrenched framework of how we conceive of responsibility. Right? I sort of always carry around in my mind this what I call the responsibility spectrum. Each point on that spectrum would suggest a different way of regulating this, right? If you're just all the way up full, the human had free choice. People make their own decisions. You don't do anything, right? That's the hand off the steering wheel.
Natasha:	But then the next level down is consumer protection, consumer education. I think that goes some way toward this, right? Without that, we wouldn't have the warnings on the cigarette labels, but the idea there buys into the idea of individual responsibility because it assumes that it's like, "Okay, well, yes, we continue to be fundamentally choice making individual responsible agents. We're homo economicus, right? But we'll seed that you need full information in order to occupy your full agency. So let's put the warning on the cigarette label. Let's put the odds on the slot machines. Let's suggest that we can fix gambling addiction by ...
Tristan:	Why is that insufficient?
Natasha:	... statistical classes so that you understand statistics. Plenty of the gamblers I talked to were statisticians and accountants.
Tristan:	Oh, this is a critical point.
Natasha:	I mean this is back to like, "They're not the dupes," right?
Tristan:	Right. So this is actually a really critical point that I want to stop here and name. Often, there's this view of, intelligence is inversely correlated to your vulnerability to these things.
Natasha:	Right.
Tristan:	But speaking as a magician, if someone has a PhD, it's actually usually easier to manipulate them because they are more confident and therefore less likely to notice the things that they're doing. If we're PhDs, people are more likely to self-justify or post-rationalize their decisions with more complex reasoning. There's a great study on how on the ethical behavior of ethics professors and how they actually do more like unethical things but they're better at reasoning, creative rationale for why what they're doing is okay.
Natasha:	Right, so we're all human.
Tristan:	We're all human, exactly. I think that's what this is really about.

Natasha: And also, in this particular example and I think for some of these technologies as well, the assumption, "And we're just giving people what they want," and/or the sort of, "And some of them are dupes." The assumption there is that what they want is to win or what they want is ... Sometimes even as a cultural anthropologist, the idea is that you really hang out with people and you hang out with the things they're doing. In this case, the technologies. What I found is that if you talk to them long enough, they are able to articulate that they're wanting something very different than you go in thinking.

Natasha: In the case of gambling addicts, they're not trying to win. It's not like they're dumb in math and don't get gambling and how it works, right? It's not like intelligent people who stay up and binge when they have a meeting the next morning on Netflix. They can't stop somehow, and it's overriding the rationality. In the case of gambling, it's because what they want is that affect of the zone.

Tristan: Right. It's almost like what they want is that feeling.

Natasha: They wanted to associate the state.

Tristan: They want the state.

Natasha: They want the affect modulation, the mood. I see all this stuff. These are all little an affect modulators. They modulate our mood and our sort of feeling states. Whether it's boredom, anxiety, what have you, you're constantly have at your fingertips these little portholes for modulating your affect. That's the real aim. It's not about communicating or winning or a game.

Tristan: Right, I find this fascinating, the difference between our conscious statements about this. When people get sucked into scrolling on social media the infinite scroll, which by the way itself is a slot machine because there your fingers going swipe and you're not sure what's it going to be next.

Natasha: Random rewards.

Tristan: People self-report that, "Oh, why am I scrolling on Facebook?" It's like, "Oh because I'm trying to connect with friends." That's what social media, of course, is for. We have this really simple language that we use to self-narrate our behavior like, "I'm connecting with friends." Really that, my motivation or is my finger enjoying the feeling of just doing it again?

Aza: Aza here? Remember last episode where we pause Natasha's interview to brainstorm. Well that last point Tristan made about whether our time on social media really is helping us build our connections with friends, we want to stop there and double click and explore that more.

Tristan: How can we make it as easy to arrive at a dinner table with your friends as it is to scroll mindlessly on Facebook. Like right now it's never been easier to just get mindlessly turned into a zombie. So, imagine right now, a very concrete

	example, if Facebook knows that you're lonely you're scrolling around, and after it recognizes this the next swipe up it just shows three or four of your friends who are nearby who are available right now and it shows that they're also lonely and less than a mile away. Because it knows that they're lonely because they're also scrolling mindlessly. And you could opt in to some kind of that says "hey for these six close friends if we're ever lonely at the same time please let us know because we'd love to send each other a phone call. And it could do that.
Aza:	I love this core concept of we can detect when users are getting into this zombie flow state.
Tristan:	Right
Aza:	And once we can detect it…
Tristan:	Call it the Zombie Detector
Aza:	The zombie detector! Or this trance state and once we can start to detect when people go into the trance state we now have an opportunity of choice of what to do about it. And I think that's cool because we can connect you to other people, we can start slowing everything down so it gives your brain a chance to catch up to your impulse. You can have the app stop working. There's so many things you can do once you call that out. And I think for every company, every designer— you know we always say design should delight the user, bring joy to the user. Which is another sort of self-dealing way of saying "if you give them a little bit of dopamine you can get them to stick around a little longer and have better brand affinity with me." I think we can go to way the next step. We should know when we're causing harm or causing people to zone out. When we're taking away their ability to live the life and make the choices they want because we've taken away the right angles. If we can detect that, which we clearly can, then we can start asking the more interesting questions of our products, which is "how can we start to give that agency back."
Tristan:	What kind of agency is helpful. I think that's the core question you're asking.
Aza:	And now, let's get back to our interview.
Tristan:	As you said, people always assume that there's this sort of people are dumb, they're dupes. Why don't they know that they know that?
Natasha:	This whole idea of how should we regulate it is making all sorts of assumptions about who we are in the world, right, and what we want at each step.
Tristan:	Right.
Natasha:	It's like, "No, why should we regulate it?" An extreme view of this in economics would be Gary Becker, who actually said that there's rational addiction model,

right? That smokers are consciously, rationally deciding they're making a choice, right? This is their sort of extreme homo economicus, who knows his or her own preferences. Then reveals them through their marketplace choices.

Tristan: The proof of that in his paper, isn't it, that as taxes go up, people actually do, when you change the price, they do sort of change their addictive behavior. That's one of his examples.

Natasha: That's one of his. Yes.

Tristan: What's the counter to this argument what we are rationally addictive?

Natasha: In a way, you could say that this whole book could be read as an extended case study against the model of homo economicus. I mean I think that to really shift the ethical framework, we have to shift the model of the human being that's being regulated to. The consumer protection assumes a certain kind of consumer who wants to be informed to make rational decisions in the market. Addictive things and these little affect modulators throw a wrench, totally throw a wrench into the whole economic theory of economicus. It goes to a different level of being human, which is not a weaker level. I don't want to call it a weakness.

Tristan: Right, it's just a different model.

Natasha: Just also to pause here and recognize that that is essentially the mission of behavioral economics since the 70s and with Kahneman and Tversky and many beyond leading all the way up through kind of nudge and some of these different ideas. But I don't think that that has succeeded actually in displacing the model of homo economicus. What's happened, and I've even seen you participate in this, Tristan, is that the brain now is in a very loosey goosey way, split into the frontal cortex and the reptile brain. What that does—that's coming from Game Theory, right—that was the contribution that economists made to behavioral economics and from Game Theory.

Natasha: What they were trying to do was sort of preserve the economic visions. What they did basically is port homo economicus into the brain and into the neocortex. Turning it into a, "You are no longer homo economicus, but your frontal cortex is, I call it homo economicus, homonculus.

Tristan: Right, there's a little part of you that's a choice maker.

Natasha: Then there's the reptile brain.

Tristan: Right, and the rental brain's evil or wrong or something like that.

Natasha: Right, and so then governing, and this is how nudge works, right? The premise there is that the consumer, you're not ... Yes, consumers are irrational. We're going to accept that, but we are going to govern to enhance the agency-making,

	choice-making of that sort of frontal cortex. So you're still legislating to this pure inner sort of liberal subject, right?
Tristan:	It's not consumer protection. It's prefrontal cortex protection or something like that. I hear you making this point.
Natasha:	Yeah, and I think that it bears ... It's like it goes some of the way. If I think in a moderate way about it, like I'm onboard with the whole lot of the things and health insurance should be opt-out instead of opt-in. It's all good. But I can't help also, as a critic, noting that it carries on. It doesn't go far enough. If we go further down the spectrum, right, and we think about how could we actually change the technology. Because so far, in the gambling industry, I have a whole, in the second part of my book, I'm like, "Okay, look, look at all the ways that the slot machine. We try to regulate it." Some of those ways involve adding extra little screens and modules onto the slot machine or above the slot machine. Better even sometimes called like the responsibility aid or the pre-commitment calendar. It's all on you to open that. Go in there. Set your calendar. Lock yourself out. Then it sits-
Tristan:	Tie your hands behind your back, put the seat belts there.
Natasha:	Right, but then it sits there alongside a completely contradictory algorithm and ergonomics machine that is trying to get you to spend as much as it can. It puts the person, again, the poor exhausted person, right?
Tristan:	Right.
Natasha:	Is saddled with resisting temptation at managing themselves. What if we just moved that regulation down to the level of the algorithm.
Tristan:	What is the point of these things in the first place? I mean just to name and mirror what you're talking about. This is called responsible gambling devices. Is that what it's called?
Natasha:	Responsible gaming device. It probably has a million names now. The latest is just this pre-commitment notion, which really is like the next step maybe from consumer protection because it allows that like Homer who self-bound before passing the sirens.
Tristan:	Right, it's still protecting the-
Natasha:	He's like, "I'm feeling rational now but I know I won't be in the future. So let me bind myself to the mask."
Tristan:	Just to notice that this moral framework in this philosophy of there's still a choice maker in you and we'd still have all these people manipulating you. But now, we give you this tool to sort of try to prevent us from doing what we know we're doing to you anyway. This is not very far from the social media

	screen device controls that have now been introduced right now. You can manage how much time you're spending and don't you want to say how many notifications you want, and putting all the burden of responsibility on you.
Natasha:	Right.
Tristan:	So now to defend a little bit, this race to the top notion that we go for, is that we have to flip around the incentives. Forget the competition part, but just so long as there is a race to get something out of you where you are an object to extract something from. My goal, even if I give you these tools, like I said, is that the power is asymmetrically on my side. It's like bringing a knife to a space laser fight like, "I'm going to win because I still have the thousand engineers and a supercomputer. I know your nervous system."
Natasha:	And the data and the history.
Tristan:	And the data and the history. I've got two billion other people that I've processing in a supercomputer, so I can make predictions about you based on even if I'd never seen you before. Based on like the first two clicks that you've made, I know exactly what your psychology is. This level of asymmetry, we need a different way for this to be modeled. The only way isn't just to limit the power. We have to flip it around and say, "How can this be in service of people?"
Tristan:	This has to be switched around in a deeper, more fundamental sense as opposed to, "We're still pumping out coal, but we put on some stacks at the top to try and clean it out a little bit." What should the technology designers know, now that this is all out there? We can see clearly that YouTube is a machine that's playing you like a slot machine to see how many views did I get. Twitter's a slot machine to say, "How many followers do I have now? Did I get more retweets now than I did 10 seconds ago?"
Natasha:	Often, this conversation can get muddy because people just say technology writ large, like it's this big muddy, monolithic thing. But I am more about and I tried to do that in my book, and since my book, I've tried to do that in relation to some other technologies. I think you can really specify certain things that are particularly, let's just use the word bad. The things that kind of result in sucky behavior, that you don't like about yourself, right? I was forced to do that, I should say. My book came out. I'm an anthropologist. I'm all about the specificity of my case study, but I started getting calls from journalists in around 2012. The smartphone had been out since 2007, the iPhone. People were beginning to see problems with it and trying to think that through.
Natasha:	I remember you reached out to me. It took some convincing. But then I tried to kind of sit down and say, "Can we extrapolate what is in common? Can we distill the features?" I think we can and we can identify specifically what they are. I call it the ludic loop. It has to do with across all of ... These are questions that designers could really ask themselves as they're designing like, "Am I creating a

	ludic loop?" A ludic loop, this is an evolving idea, right? But at the moment, I think about it as having four main components that spurs these continuous cycles of action, which are really cycles of affect modulation, right? One is solitude. Even if we call it social gaming, Candy Crush is really just you in the screen, right?
Tristan:	Right.
Natasha:	So solitude. You're alone with the machine. The next one would be fast feedback. Fast feedback, you're getting immediate reinforcement in that insulated autonomous zone, right? Immediacy, immediacy. These stimulus response loops are rapid. That contributes to the hypnotic algorithm. Ask yourself, "Are there pauses? Is there breathing room?"
Tristan:	Right, is there a stopping queue, in other words.
Natasha:	Right. Are there cues for stopping? Or just invitations to think about stopping, right? The next one would be random rewards. That's come up a few times. This is well-understood since the 60s with Pigeon Research. Things where you don't know what you're getting and you don't know when. We'll keep you drawn in. Then there's the continuity. This is an important thing, which is the non-resolution of many of these games. Does your game have an arc? Is it like a narrative kind of game?
Tristan:	That has beginning, closing, and end.
Natasha:	That where you build a character where there's actually change? Or is it just repetition, repetition, same, same, same with no actual end in the game, right?
Tristan:	Reminds me of the TV show Lost.
Natasha:	Right, but it did ultimately end, right?
Tristan:	Without the resolution, but your point is that, is it an open-ended mechanic that is seeking to create the curvature that just continues to curve and always interesting and more fascinating and unpredictable and fast and solitude in random ways, but doesn't actually have an arc and an end?
Natasha:	What I think this ludic loop serves is a certain capitalist's contemporary. There's many capitalist models out there. It's a certain, very fiercely, entrenched model for profit. I spoke before of the false wins. That's been called Costco gaming where you profit from volume, not price. I think we see this playing out in the ludic loop because, for the most part, these little loops are tiny. I call it nano monetization. The profit logic here is that it's the click economy. You just need to get as many, many, many, many, many clicks as possible. One thing we could just start doing, and I'm not the person to do it, right, but just to put out there. I know you've encouraged this direction as well, is to think about what are

	some different business models that are more ecological in their view of sort of cause and effect and health and care, et cetera.
Aza:	One way to build a different business model is to build a very different type of product, and how you build that product depends on what kind of approach you take to help your users manage their attention.
Tristan:	There's a phrase in Danish or Japanese that don't tie the cat to the bacon.
Aza:	Oh, yeah. Don't tie the cat to the bacon.
Tristan:	Which is to say don't tie the thing that you're seduced by to the thing that's in front of you or yeah.
Aza:	Yeah, exactly. It's just like you're setting yourself up to fail if you tie the cat to the bacon. This is the example here, right? We know that streaks are powerful, so let's include a calendar where you can mark off the days that you don't smoke. Or you could just change the product so it's not addictive in the first place.
Tristan:	Right. I think this speaks to two styles of intervention. There's one style which is giving you better defensive mechanisms. It's like you're holding up bigger pads against the persuasive machines. But that's like not the actual way that we want this to work. We don't want like an increasingly, increasingly persuasive world where like the trend line is going up and up and up and up. But we give you like these small little tools, like a little bit more padding between you and that persuasive world. We want to change the direction of persuasion so it's cooperative and uplifting us in the lives that we want to live.
Aza:	Right.
Tristan:	Versus being oppositional and giving you some better tools that you might be able to implement. There's two kinds of changes, and we have to make sure we're differentiating.
Aza:	The image that comes into my mind is The Incredibles. When there's that machine that learns from all of like the Incredibles' behavior and quickly learned is all of their weak points and starts attacking. That is the engagement economy.
Tristan:	That's the whole thing.
Aza:	Applied to our minds. That's the slot smachine applied into our minds. There's your kinds of two solutions. There's one kind of solution. It's like give Mr. Incredible like a bigger padding and armor to defeat this thing or change that machine, so it's helping us build a better future.
Tristan:	Right, exactly.

Tristan: You've identified these four components, solitude, fast feedback, random rewards, and continuity.

Natasha: Continuity with no resolution.

Tristan: Right, okay. It's also-

Natasha: That's toxic. I think that that is has become a toxic loop that is facilitated by contemporary technology. It's got its own sort of internal momentum. We need to stop and recognize it and regulate it. I am not so hopeful that change will come from within because, essentially, companies at the end of the day are still about increasing their bottom line and revenue.

Tristan: Absolutely, that's one area we'll get into probably outside this podcast, unfortunately, but still I'm talking about it with you. But is the policymaking that can protect against these dynamics and protect against the business models that are adversarial or treat human beings as resources to extract in which ... If time on site is directly coupled to my stock price, why in the world would I change? You cannot count on companies to change on their own except to offer you the responsible gambling management device systems like time. Like here's a chart where your screen time goes.

Natasha: I'm a cynic there. I'm a cynic.

Tristan: Absolutely, me. I am as well. This is not about just… We need the full force of collaborative mechanisms from shareholder activism to policymaking, to people on the inside advocating once they understand these things, to bring up these things in conversation. The media, the public, parents, children. This is a full-court press of systems change.

Natasha: Right. We need to make people aware that when they sort of log into things, and they're asked to identify how many pictures have bicycles. They're actually doing work, right? The thing extracted from them, right?

Tristan: Absolutely. A couple things and just to translate these four features you've identified into some concrete actions that you could imagine some companies taking. Solitude, you just mentioned that people being alone. It's really hard to just be a ludic loop if you're sitting there with other friends or other relationships that are active requiring your attention.

Natasha: Think of live poker. People can become addicted to that. Fine, but that's different than what we're seeing.

Tristan: Right, where you've totally control the environment. With solitude right now, how much does Apple, Facebook, Google, YouTube, et cetera? Are those devices and the menus being offered through choice-making screens that we hold in our pockets, are they strengthening or deepening solitude or are they actually helping us be with other people?

Tristan:	I think this is one of the core changes that, especially Apple's in the best position to make. Imagine they have this app right now called Find My Friends that lets you ... It's never been easier to see a map of where it's kind of hard to opt in. You have to add all these friends and you can see where they are.
Natasha:	But then people ...
Tristan:	That's very different.
Natasha:	...are suspicious about what is being extracted from that data of you and your friendship network and how is it being monetized and modeled as first.
Tristan:	Although, Apple in this case is not actually. That's because of their business model is different.
Natasha:	But people are still suspicious, right?
Tristan:	People will be suspicious. I think apple needs to evolve from being the privacy company to the trust company because their business model not being about attention and data can actually move in this direction. But just to name this example of what the companies could do. Any company, Facebook, YouTube, Apple could actually say, "Okay, if solitude is the issue, how would we help? How would we make it as easy to access meaningful time and relationships with our friends as it is to access knowledge from Wikipedia?" Instead of imagine of a Find My Friends, there was a Time With Friends kind of thing.
Natasha:	Right.
Tristan:	Right now you think, "Oh, hold on a second. Don't they already offer this to us?" You can just open up a text message. You can type in the name of the person. It's never been easier to talk to someone? Yet when we're feeling isolated, that doesn't feel so accessible. Does it? Because you're given this menu that says which key do you want to type? Do you want to take the Q key, the W key, the E key? But that's not a very empowering menu when you're in a state dependent, isolated, lonely state. You're not feeding your brain the information that you need.
Natasha:	Right, and then there's also the point that I don't think any one of these on its own is a bad thing. Solitude is a great thing, actually. But when it's combined with fast feedback, maybe some anxiety in continuity, then it becomes bad. It's really hard to design. Why would you want to design against solitude?
Tristan:	Agreed. But I think right now the technology ... We know that loneliness is an incredibly costly. Right now, it's deepening and amplifying limits. It's not let's eradicate loneliness and solitude, but let's certainly not be deepening it in a crisis right now where most people are feeling that.
Natasha:	Or medicating it.

Tristan: Medicating it. The second one, fast feedback. The easiest situation here is for these apps or these companies to batch your rewards from drip by drip, by drip, that perfect random schedule reward, as you already said, to something that is the batched version. This is the easiest change that Facebook could make to prove that they are on the side of users, Instagram, Facebook, TikTok whatever the apps that have notifications. Why in the world do you need to get drip by drip if the default setting was, "Let's batch it and deliver it once at the end of the day, unless specifically it's urgent."

Tristan: The other one, random rewards. I think another one that people often don't think about, randomness is also about ambiguity. I don't really know what's going to come. That mystery, that curiosity.

Natasha: It's life.

Tristan: It's life, yeah. But when your phone buzz, let's take the simplest example. Your phone buzzes. It's totally ambiguous. It could be a text message from someone in your family saying, "Our house is on fire." Or it could be, "Hey, YouTube says there's a new video from that channel you subscribed to." Imagine if there's a cuss, there's a specific unambiguous vibration signature. You can actually set this up with your phone right now, but Apple could make this even easier for people. It's something I've done. When I get a text message, it actually buzzes in a unique three-buzz pattern. You can go buzz, buzz, buzz. And that's very different than when you get a calendar notification, which you can buzz once in a long pattern or something like that.

Natasha: A problem is still a lot of self-management, right?

Tristan: It's a lot of self-management, but again, imagine a spectrum from it's totally impossible right now to do this and dig into your settings to Apple creating a wizard that tries to make this as easy as possible. Sets up the default settings and actively tries to make this. Again, Apple's business model here is not adversarial. They could do this. In fact, consumers would trust them more if they did. The third one, that was there one, random rewards. The fourth one, continuity and non-resolution. This would be, as you said, reintroducing stopping queues. One of the things people say, "Well now, you can actually set these time limits when you're infinitely scrolling." You can show people a chart or a notification that says, "Hey, you've been scrolling for this long." But that actually just makes people feel worse about it because there they are feeling lonely. They say, "Oh my god. Now it's been four hours on it."

Natasha: Let me say, here's where, coming back to my book, as a sort of rich case study of one area, this has been discussed until you just want to like bang your head against the wall in the gambling industry for years. There are literally like thousand page reports that discuss precisely, "Should we have a message that flashes at you? Should it scroll from left to right? Should scroll from right to left? Should it scroll on the bottom?"

Tristan: For stopping queue, you mean?

Natasha: Yes.

Tristan: To introduce that stuff, okay.

Natasha: Each of these things, each of these things has been so debated, so tested in the gambling industry. But the gambling industry, itself, likes to point to those thousand page things and be like, "It's a mess."

Tristan: Look at the work we done.

Natasha: There's no, they didn't do any of the work. This is research.

Tristan: Oh, I see.

Natasha: They point at it and they say, "This is just a big mess. We don't know anything. We have no evidence on which to base any concrete change at all. There could be unintended consequences. If we put the scroll thing on, you're going to feel worse about yourself. You're going to want to keep playing." I'm here to say that actually all of that research has generated certain best practices. There's a guy, Bob Williams in Canada. You can read his report that out of those tomes of research have come certain things that work.

Natasha: It wouldn't be a bad idea for the more high-tech tech industry, Google, Facebook, Apple to go and read that report and say, "Oh isn't that interesting that putting a clock on doesn't do anything, but some equivalent of like lowering the number of lines you can bet on in the multi-line game. That would work." And so would access, restricting access, cutting off. There are best practices is what I'm saying. It's not a sea of like, "We're not going to do anything because we don't know what to do."

Tristan: Oh, totally. Right, and this is going to be an illusion that they'll say, "We don't know what to do." There's very concrete things that can be done. The point of this podcast is to try and encourage, once we've diagnosed the specific features of human psychology that are being exploited, to say what would be most embracing, compassionate and protective of those instincts. In just the last one I want to mention since I know we have to finish up is an example for continuity, Aza Raskin, my co-founder, who invented the infinite-scroll has actually shown that if you created a random slowdown. As you're scrolling, basically, when you give yourself a notification or a timer, you're talking to the PR department of your mind. You're telling your conscious mind, "Oh, you're spending time." That doesn't actually change what your finger's doing. Your finger's still going to get that thing.

Natasha: Friction, introduce friction.

Tristan:	Introducing friction. What he's found is if you actually make the internet connection just get randomly slower, not in a predictable way, in a random way and does it linearly or progressively as the longer the time you spent. You can imagine a future version of these time management things, simply slowing down your internet to those websites like Facebook or whatever after the fifth minute or whatever you've set your limit to. That would be something that's a little bit closer. I'm not saying this is the framing of the problem is not even about time, but that would be at least something we can do.
Natasha:	Right, and certain things, I just want to end, should just be not allowed as options because I think people treat this as a normal commodity. This isn't like a movie you can ask for your money back because you didn't like it or a pair of shoes you can return. This is what's sometimes called the no ordinary commodity. The way that this is not ordinary is that it is affecting you in such intimate physiological, affective ways. If we can figure out how to regulate toys from China and the percentage of plastic, I think we need to do the research to figure out what exactly are we regulating here, what thresholds do we want to set, what is the psychology of this?
Tristan:	I think that's exactly what needs to happen next. Natasha, thank you so much for coming. It's great to have you.
Natasha:	Thank you. It's always fun to talk.
Aza:	Before we go, we suspect that there are listeners out there who want to keep talking about these issues. Natasha raises an interesting framework for products that extract attention. Are you in a technology company whose product isolates users no matter how unintentionally? Does it encourage people to send a message instead of calling, allow them to scroll mindlessly? Are you delivering rapid feedback and variable rewards or continuity with no resolution? What could you do about that? One of the challenges of this problem is just how big it is, how systematic. You have to go all the way from policy down to pixels. It's hard to know how to have voice in that system. That's something that, honestly, I'm figuring out for myself.
Aza:	But there are many ways to have voice be voices of policy makers as a voter, as a shareholder activist, as an ethical board member, as an educator, as an evangelizer, as an artist, as somebody who's on the ground and hands on working to clean up some of the mess that technology has created.
Aza:	Really excited to see how we all find our voices. Because I don't think anyone of us wants where this is going. Next week on the show, we talked to Yaël Eisenstat, a former CIA officer and National Security Advisor to Vice President Biden, who now works on analyzing the threat of technology to our society.
Yaël Eisenstat:	You as some of the most brilliant minds here in Silicon Valley that build incredible technologies, build incredible companies. What I find fascinating is how you can have the smartest people working on these things. But as soon as

there is a problem, oh, that's too hard to fix it. I mean, let's be honest, how many times have we heard Mark Zuckerberg or Cheryl Sandberg say, "It's really hard. We're sorry. We know we need to do better, but it's really hard."

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