



Artur Dziuk

The Ting

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Outline

What would happen if you let an app make all the decisions in your life?

In Berlin, four young people start a new company and co-develop a new app, the so-called Ting which gathers body-related data, evaluates it, and then uses this basis to provide behavioral and decision recommendations. The concept of Ting proves convincing – the app makes a great impact. However, in order to win more investors for the company, the four start-up founders are soon forced to take part in a dangerous game. They sign a contract to follow all of Ting's future recommendations, regardless of what happens, with fatal consequences.

- **An exhilarating novel set in the Berlin start-up scene**
- **For fans of *The Circle* and *Her***

Artur Henryk Dziuk was born in 1983 in Poland, and as a child, he moved with his parents to Berlin. He was the publisher of *Bella triste*, a magazine for contemporary literature. He was also an artistic director for *Prosanova*, a festival for contemporary literature, and is currently employed by the Fraunhofer Society for Information and Communication Technology.



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Sample Translation

by Emma Rault

Niu

(...)

A brief, shrill noise startles her out of her thoughts. She can't figure out where it's coming from. Her eyes move to the monitors, but / is still humming away as before. She waits, not moving. There it is again, piercing and staccato. Is it the doorbell, maybe? Niu is surprised to realize she doesn't actually know what it sounds like. She's never had any houseguests here. Using a keyboard shortcut, she puts all the screens into sleep mode at the same time. Through the wall, she hears the muffled sound of the neighbor's TV show, a washing machine on the spin cycle. Apart from that, it's completely quiet—until the doorbell rings a third time. The desk chair squeaks as she gets up. To her right is a window with the Berlin evening skyline off in the distance. Four, five steps to the front door. The spyhole reveals a man with a round face. She doesn't recognize him. She hesitates for a moment, then opens the door.

The man looks up at her and blinks. Niu is used to this expression of surprise, feeling her unusual appearance reflected in his gaze. As a 20-year-old, 6'1" woman with broad shoulders and Asian facial features, she's not exactly inconspicuous.

"Are you Niu? I got lost. There are no names on the doors. I only know these prefab tower blocks from pictures."

The man is out of breath and seems nervous. He's squeezing his left thumb with his right hand. Niu feels sure he doesn't pose a threat—and not just because of the innocent softness in his face. She has to work hard not to let his jumpy, flustered state rub off on her.

"Who are you? And where did you get my address?"

"I'm sorry if this is a bad time."

He gestures toward her legs. She forgot to put pants on and is only wearing panties, but she doesn't want to seem embarrassed in front of this stranger. He seems taken aback by that.

"Um—I'm Linus Landmann. Do you have a minute? I'd like to show you something."

The light out in the hallway cuts off. When it comes back on again, Linus is standing by the light switch.

"It's important. Can I come in?"

"A stranger rings my doorbell at night, stares at my bare legs and says he wants to show me something? No, you can't come in."

"I'm sorry—about the legs, I mean. Did you not get my email? I wrote to you yesterday to make an appointment for tonight."

Hearing this, Niu flinches and glances down at her wrist. She has to hurry, or she'll miss the bus and mess up her whole plan.

"I have no idea how you got my address. I don't care what it is you want—I'm not interested."

Linus shrugs off his backpack and takes out a laptop. He balances it on his left arm, operating the touchpad with his other hand.

"I want to show you something. Just have a quick look. I'd be interested to know what you think. Hang on a second—wait. I've been working on programming this for years."

Niu slams the door in his face and turns on the light. As she pulls on a pair of pants, Don Quixote's answer appears on the screen.

Sancho is a good friend. I need him. He is my last link to a world I've lost faith in. But just as I need him, he needs me. It's my reluctance to see his world that makes him give it a proper look.

The guy rings the doorbell again, but she ignores him. Don Quixote's answer is better than she expected—maybe even too good. She skims through the processes in the log and is disappointed again when she gets to the last line: once again, no mistakes. Maybe she overlooked something in her hurry.

The alarm on her watch goes off, reminding her that the bus is leaving soon. Since the final test will take over two hours, she has to initiate it before she leaves the house. She randomly picks another novel from the corpus and tries to recall the protagonist and the plot.

Don Quixote, imagine you were Ilya Ilyich Oblomov. What would you do in his place to shake off your lethargy?

She starts the final phase and puts the screens back into sleep mode. She carefully lifts her trumpet from the wall mount and puts it into its gig case. The spyhole shows a bare wall. She slowly opens the door and steps out into the hallway.

The hallway is empty—her unannounced visitor seems to have given up. Hurriedly she turns to her left, toward the staircase. It's a detour that will cost her several minutes but, just in case he's waiting for her by the elevators, it will allow her to avoid another conversation, get in some extra steps on her tracker and burn a few additional calories. She's got another ten minutes to catch her bus.

Her quick footsteps echo through the stairwell. The trumpet case is heavy in her hand. Her own reflection in the window obstructs her view of the night sky. Two floors down, ten to go. Suddenly she stops in her tracks. The guy from before is standing at the top of the next flight of stairs. He's got a smartphone pressed to his ear and is looking kind of frantic.

"No signal," he says when he notices her.

Niu strides past him; he quickly catches up with her. For a few stairs they're both silent.

"Can we maybe arrange to meet some other time? It won't take long," he says.

She stops and stares at him. She can tell from the look in his eyes that it's urgent, whatever it is.

"I don't *have* any time. I'm working on an important project. I can't afford to get sidetracked."

Several floors above her, in her dark apartment, a stage of her life is coming to an end. Her hand clenches around the handle of her gig case at the thought.

"Are you ok?" he asks worriedly. "You don't look so good."

Abruptly she turns away from him and takes the next flight of stairs. To calm herself down, she checks her wrist: eight more minutes before the bus leaves. 3698, 3699, 3700 steps. Her heart rate is at 82. The man stays by her side, still looking concerned. In spite of herself, she's impressed that he's intuitive enough to pick up on her emotional state. He probably just guessed. Now he notices the device on her wrist and smiles.

"I used to do that too. It's been a while. Steps, pulse, calories, REM phases and so on. I'll bet you I was one of the first people in Germany to use an activity tracker. My girlfriend thought I was being neurotic."

He shakes his head as though he's just heard an absurd joke.

"One day it hit me: I can't do anything with all those numbers. I walked 5000 steps on Monday. 2000 on Tuesday. 12,000 on Wednesday. But dammit, what do those numbers mean? What

conclusions am I supposed to draw from them? And isn't it too late, anyway? Those days are already over and done with, an analysis is hardly going to get me anywhere now. The tracker should have told me on Tuesday: *Hey, you, get off your ass!*"

Niu's muscles relax a little more with every step. The ongoing movement feels like liberation. Four more floors; six more minutes until the bus leaves.

"Several days later I pulled a muscle in my thigh while I was jogging. It hurt just to walk; I had to take it easy for a while. But my tracker kept on insisting on the daily goal and told me off at the end of every day: *You didn't get enough exercise, shame on you!* The device didn't understand that in some situations moving less is the healthier choice."

They've gotten to the ground floor; they step outside. Their breath becomes vapor in the cold evening air. The bottoms of the tower blocks are illuminated by the muted yellow of the streetlights. The bus is coming in two minutes.

Wet leaves cover the cracks in the footpath. Yellowing posters hang next to the garbage containers, torn at the edges: adverts for a circus that had set up its tents on the bare field nearby that summer. The man is still walking beside her, mirroring her every change of direction, his movements hesitant.

"Your anecdote was very enlightening. But I'd like to be alone now. Or are you one of those guys who won't take no for an answer?"

He stops in his tracks, taken aback. After a brief moment, he catches up with her again.

"At least listen to what I'm asking. Please. If you still say no, I promise I'll leave you alone."

They get to the bus stop on the main street just as the bus pulls up. They both get on. Most of the seats are empty, but that will change later. The route runs from the east of the city through the center, ending up in the west. Niu sits down in the back row, clenching the instrument case between her legs. The man hesitantly follows but leaves the seat between them empty. The doors close. The bus begins to move, but then abruptly jerks to a halt. Someone is running towards the bus stop, waving their arms. The front doors open. Adam Strzela pulls a wallet from the inside pocket of his jacket and buys a ticket from the driver.

Adam makes his way to the back of the bus. Just before he reaches Niu, he trips over a backpack and falls into the empty seat next to her.

"So sorry, my eyesight isn't quite what it used to be, especially at night. Hi, Niu! Hi, Linus! I thought I'd join in on the conversation. Did Linus explain everything to you? What do you think about our offer? Are you in?"

Niu is speechless. After breaking off contact with Adam several weeks earlier when the hack had come to light, she hadn't thought she'd ever see him again.

"So that's what this is about," she says. "I don't want to get involved in anything illegal anymore. It's too risky, I'm through with that stuff."

Adam smiles and blinks rapidly. On his other side, Linus leans forward.

"What do you mean, illegal?"

"The data I obtained for one of Adam's projects. The reason that Strindholm—"

"Listen, that's all ancient history," Adam cuts in. "There's no point dwelling on what went down in the past. We have more important things to discuss."

He shoots her a pleading look, and Niu understands. She nods. Adam is not a bad person, even if his ambition and his ego get the better of him sometimes. At least that's what it had seemed like to her the previous times they'd met, when he'd asked Niu to do simple jobs for him. He'd needed company figures, targets, lists of customers that were stored on the badly protected server of a small logistics firm. Two hours of work. The pay would last her several months.

"We'd like to talk to you about something else entirely." He turns to Linus. "Has she seen it?"

Linus shakes his head. It costs Niu a great deal of effort to shield herself from the two of them and their needs. She reminds herself she'll need that energy later to analyze the test results. It's probably easier to just let them talk. She hadn't planned on doing anything during this bus ride anyway.

"I'm getting off in approximately 41 minutes. I was planning on spending that time with Tony Stark and Iron Man, but today it's yours."

The bus stops and several people get on, talking loudly and sitting down in the front. Linus pulls the laptop out of his backpack.

"What's this?"

"An idea Linus and I had," Adam says.

"Remember I was complaining to you about the activity tracker?" Linus adds. "I wanted to make it better. The tracker was a watch. A machine that claims we'd be better off if we adjusted to it. But in fact the opposite is true. The tracker needs to adjust to *us* in order to understand what's good for us. But of course it lacks the technical capability to do so. Which is why I've spent the past few years working on just that."

An unfamiliar source text, strange lines of code, unfamiliar contours. Niu reads a few lines; as soon as she understands the function of one algorithm, she scrolls down to the next. You can write a program very quickly if you want to, but reading and understanding a program's code takes time. It depends on how efficiently or how circuitously it's written. Linus always takes the safest route to reach his goal. Many of his solutions are clever, but they could be more elegant. On the other hand, nifty little abbreviations are sensitive to errors—and he tries to avoid those at all costs. His style is simple and transparent, without sleight-of-hand. She definitely doesn't stand to learn anything from Linus. He's a craftsman, but he's no artist.

After several minutes, Niu starts to grow bored with the code. The smooth, plain facades of Potsdamer Platz slide past outside. The bus has filled up. People are crowded in the aisle, chattering away in various languages. Adam rubs his eyes and looks at a boy holding his mother's hand. Linus is typing away on his smartphone. Niu can see the tension in their faces—the program is important to them. She checks the time, yawns, and reads on.

By this point she has begun to get a sense of the big idea behind the program. It uses algorithms to process information from a database and produce results. So far, so ordinary. What's unusual is the *kind* and the *amount* of information stored in the database. The bulk of it consists of data—tons and tons of data—gained from the user's body: their heart rate, for example, or the levels of hormones such as adrenaline, testosterone or melatonin. The algorithm analyzes these values so that it can draw certain conclusions. For example, if the concentration of serotonin, dopamine and noradrenaline in the body increases, the program knows that the user is in love. At the same time, it is also able to process environmental data—it can recognize places, people and sometimes even conversations. If the level of these happiness hormones is particularly elevated in the presence of a certain person, this will then allow the program to establish who the user is in love with. Since it also has live access to various online databases, it is able to find out that the object of the user's affection has a Tinder profile, is single and is particularly fond of romantic comedies. The result of these calculations is a recommendation: the user should invite their crush on a movie date to go see the latest romcom blockbuster.

"How do you feed these databases? Where does this physical and environmental data come from?" Niu asks.

"Our tool's hardware is able to process inputs from all kinds of different sensors—up to 150 of them," Linus replies. "And it's also permanently connected to the internet. The *Ting*—that's what we're calling the project—collects data around the clock and uses it to feed the databases. I've

integrated 64 sensors so far. I'll be able to fill the remaining slots as soon we have the funds."

"What do you mean, you've 'integrated sensors'? Is the project already finished?"

He seems pleased by Niu's surprise.

"No, not by a long shot. The design is still in its infancy and it's riddled with errors. That's mainly got to do with the code—it's just not my specialty. But we have a prototype, yes."

"So there's a physical carrier for the sensors and a medium that spits out the recommendations?"

"The recommendations are displayed in an app on your smartphone," Linus says excitedly. "But that's going to change very soon. I have some great ideas for this part—I'm sure you'll like them."

"Okay, but where are the sensors that gather the physical and environmental data? Did you biohack yourself or something?"

Like back in the stairwell, Linus nervously squeezes his thumb. He thinks for a long time before answering.

"It's kind of hard to explain—it's a little out there. A trade secret, you might say. I'm reluctant to talk about it until you've—"

Linus' phone rings. He turns away from them and whispers, but Niu can still hear the conversation.

"Hi Kira. We're still working. I'll probably be late. Yeah, we're in a meeting right now. I'll call you back later, ok? Sure, will do."

She doesn't want to intrude on this stranger's privacy, so she turns back to the laptop. The source text is an endless string of algorithms—thousands of them. As she scrolls quickly through the lines of code, she begins to understand why Linus' code is simple and by-the-book. He's afraid of getting lost in it. The complexity of the program, the ambitious goal, remind her of her own project.

"There must be a whole bunch of expensive technology behind this thing. Where did you get all that equipment?"

"Not thing—*Ting*," Adam interrupts her. "From the Germanic word *þing*. The word originally denoted the assemblies where leaders and elders made decisions and issued verdicts."

"We did our homework, as you can tell," Linus laughs.

"Oh, you have a PhD?"

Linus flinches as if she's slapped him in the face.

"No."

Niu doesn't press the point. In the last section of the code, the algorithms begin to have mistakes in them. Even though she doesn't know anything about hormone levels or the composition of gastric acid, she can see at a glance that the corresponding calculation models contain errors. They are followed by a number of comments about possible solutions and algorithms that haven't been implemented. Then the code breaks off.

Almost all the seats in the bus are still occupied, but no one is standing now and no one is talking. She's almost reached her destination. Niu closes the laptop and hands it back without saying anything. Feeling Adam's and Linus' annoyed gazes on her, she presses the stop button, gets up, slings her trumpet case over her shoulder and heads for the door.

(...)

The facades of newly renovated turn-of-the-century buildings slip past outside. Adam and Linus stare out the window, neither of them saying anything. Niu feels their bodies pressing against her

shoulders—it's uncomfortably cramped in the back seat. But uncomfortable is all it is. Normally she'd freak, hemmed in like this between two foreign bodies. Surprisingly, though, it even helps her—she feels reassured by the body contact somehow. Slowly her legs unclench and she can relax her muscles again, until the stiffness leaves her body entirely.

"Alright then," she says quietly. Turning to Adam, she asks, "Why did you guys show me the code? What do you want from me?"

Adam claps his hands. His gray eyes are narrow and tired-looking; a crooked smile plays across his lips.

"Linus and I are starting a company. What you saw there is our product."

"An alpha version of the product," Linus adds.

"We're currently looking for an angel investor who can provide the start-up capital.

Unfortunately it's turning out to be more difficult than we expected. But it's only a matter of time. As soon as we have funding, we can focus on getting the *Ting* ready for mass production. The only problem is we're lacking a software engineer with the right skills."

"So you're running around town trying to put together a team. The brave Avengers are recruiting me to save their product?" Niu asks.

She catches sight of the taxi driver nodding in the rear-view mirror, as if to show her he has a similar take on the situation.

"To be honest, we've been looking for several weeks now. You're not the first person we've asked. The other developers turned us down. And as far as the 'team' is concerned: a programmer is all we can afford right now. The starting salary won't be as high as with Apple or Microsoft, and the hours are longer. But you'd have a great deal of responsibility and an important role at the table. Together we'd build something great."

Niu remains silent for some time, trying to picture herself, Adam and Linus quietly working away in an office somewhere. The mental image makes her tense up. After all, she's spent the past few years in her apartment in Marzahn working on programming *I*—just her, with no one else bothering her. On the other hand, she's toyed with the idea of founding a startup from time to time, or at least working for one—ever since her senior year of high school, when she found out that's what almost all the boys in her class wanted to become. Not artists, or pilots, or stockbrokers—the hero of the modern world is a guy—or girl—at the helm of a startup.

"Even if it's possible to make your tool into a reality, do you guys really think there's a market for it?"

Adam raises his eyebrows.

"Do you know the startup cliché—'we want our product to change the world'? Hardly anyone manages that. The odds of becoming as successful as Google or Facebook are lower than the odds of winning the lottery. But then again, starting a company isn't just about the luck of the draw. I mean, look at all these people—"

Adam motions toward the window. The streets are crowded: drunk tourists, suits on their way home from the office, students.

"All these people have goals in life. Finding something to strive for is the first step. But going on to make the right decisions in order to reach those goals as quickly and efficiently as possible—for most people, that's a step too far. At any given moment, people have to weigh hundreds of different options against each other."

Linus leans forward, rests his head against the seat in front of him and turns to look at Niu.

"The human thought process is no more than a series of false conclusions. We don't even notice it. I'll give you a very banal, everyday example: imagine you go to the theater to see a certain play. You paid 20 euros for an advance ticket. You've got it in the pocket of your jeans, along with a

20-euro bill. You get to the theater and find you've lost your ticket on the way. You're annoyed, but you still have the 20 euros. Do you buy a new ticket at the box office?"

Niu takes a moment to consider the situation.

"Depends on how eager I am to see this play. But in general: no. I wouldn't spend 40 euros just to see a show."

"Alright," Linus continues. "Imagine a different, but similar situation. You haven't bought an advance ticket—you're planning on getting a ticket at the door. So you take two 20-euro bills. But when you get there, you find you've lost one of the 20-euro bills on the way. Do you still buy a ticket to the play?"

Niu nods, seeing what Linus is getting at.

"Sure, I would. Because the money I lost has nothing to do with my decision to go see the play."

"Most people would do the same as you. But it doesn't make any sense. If you look at the numbers, the loss is the same in both situations. It's just that our brain interprets them differently."

To her right, Adam shifts in his seat, as if he doesn't have enough space to make his pitch.

"Irrational decisions are one of the problems we're looking to solve," he says. "But there are others, too. Stress, for example. The more options there are to choose from, the more difficult it is to make a decision. And in our world, there's an infinite array of possibilities. People who use the *Ting* will no longer need to worry about all the major and minor diverging roads. The *Ting* will choose the best possible path."

Before Adam continues, he takes a deep breath and gathers himself, as if to charge up the words he's about to speak with energy.

"Imagine a world where everyone uses our 'satnav for everyday life.' People would be healthier, because the *Ting* would tell them what to eat, when and how much to exercise. They would be more successful, because the *Ting* would help them to get the right job—not the job they desperately want, but the one that actually matches their skillset. They'd be so much happier, because the *Ting* would show them which friends and relationships have a detrimental effect on their life. They'd be more relaxed and in balance, free from anxiety. Dammit, people would actually be the way they want to be. Better in all respects. It's not we who will change the world—the *Ting* will."

The car stops at a red light in Mitte. Another throng of people passes in front of them. How many of them would actually use a product like the *Ting*? Niu wonders. Would *she* use it? A program that tells her when she's had enough sleep, what nutrients her body is missing, what she should eat to address the deficiency? Of course she would. The *Ting* would help her optimize her everyday life and stick to her plan. But above all, it would help her be mindful of her sensitivity and prevent her from getting overwhelmed. It wouldn't allow her to get into the kinds of situations where she freezes up because all the impressions and emotions are just too much.

But then, it's irrelevant how promising the idea is. The *Ting* is months, if not years away from being able to help anyone. She's got a project of her own, even if it's about to wrap up. She's got no room in her life for a second one, Niu tells herself. More than anything, though, she doesn't want to take on the risk. The risk that she won't be able to cope with the new situation, with having to interact with these two near-strangers, with a completely new day-to-day routine. Right now she's ok. Much better than she knows she can be, at least. She doesn't want to jeopardize that—not for anything in the world.

Linus interrupts her train of thought.

"You haven't said anything about my code yet. What do you think of it? D'you think you could work with it?"

Niu hesitates, and then decides to be honest.

“I like the idea, and I like some of what you’ve done so far. There’s only so much I know about the processes within the human body, our hormone levels, metabolism and so on, but the models seem to make sense.”

Linus smiles, pleased.

“At the same time, it’s the models that are the biggest problem. They can’t learn—they’re inflexible. Like the activity tracker in your anecdote. That may be enough when it’s about something like our water intake. But to analyze complex situations you need a program that is truly capable of adapting to the situation and the user. You need self-learning algorithms.”

The smile and the color drain from Linus’ face. She senses there’s a danger that his palpable disappointment will rub off on her, get the better of her. She won’t be able to last much longer cooped up in here.

“I’m an engineer, what can I say,” Linus says quietly. “I can show you my ideas for what I want the recommendations to look like eventually. It’s a little out there, but you might like it.”

“Sorry, that’s not going to be enough. You did a good job with the body sensors. But your *Ting* doesn’t gather enough environmental data. It’s looking at the inside, but when it comes to the outside it’s as good as blind.”

The taxi pulls up at the curb; the driver turns off the engine. Linus stares at the headrest in front of him. Adam is cradling his head in his hands, waiting for Niu to say more. She shrugs.

“But the biggest problem is still the code. Just tweaking it isn’t going to be enough. Your *Ting* would have to be redeveloped from the ground up. I don’t have the time for that. I have my own projects. That’s everything, right? I’ve already said thank you.”

Niu leans over to open the door on Adam’s side. He lets her get out without saying another word. Before she gets the trumpet case out of the trunk, she takes a deep breath. The biting air floods her lungs—it feels good. The bleak facade of the tower block is dotted with lit-up windows. Somewhere way up there is her apartment, where Don Quixote is waiting for her with his answer. She turns around one more time at the front door. The taxi moves off again, two motionless figures in the back.