

ELECTRIC SPEECH

It was supposed to be a standard procedure – minimally invasive and without any lasting side effects. At least, that's what they had told her.

The sleek, white walls of the doctor's room were still fresh in her memory. The doctor had been so sure of himself, of his medical skills. He had told her he had done this procedure more than a hundred times already.

Now, she couldn't help but wonder if he had simply messed up the procedure – slipped with the equipment and damaged some of the surrounding nerve tissue or damaged the implant itself. But then, that seemed almost impossible with how automated these procedures had become over the past decade. Especially considering how every procedure was now assisted by a medical robot, equipped with vast medical knowledge and a high-functioning AI that would predict potential complications to ensure the best outcome.

Nowadays, implementing memory chips was no more complex than stitching up a cut. An anesthetic here, a little cut there, and then you were as good as new – or even better than before. Over the last decade, it had become almost second nature to rely on technology like this. A memory chip had become the first choice to improve your academic performance or to help you retain more information.

Looking back on it now, the most important thing had always been to improve your usefulness for society; to make you a better data analyst, and to improve your ability to retain enormous amounts of data. Helping you keep track of your memories, of the very parts that so crucially had shaped who you had become, had always seemed like an afterthought – if the thought was there at all. Of course, nobody had questioned it back then, they were all too excited about the technology, about having understood the complexity of our memory on a level that enabled us to modify it. Nobody had stopped to think about the implications of that.

So, it was safe to assume that it had not been a simple complication during the procedure that had led her to end up here – in a holding cell, waiting to either be examined further, maybe even studied as a test subject for 'anomalies' (as they had carefully put it), or to simply be discarded as a potential danger to the system. And what that second option might entail, she didn't even want to consider.

It had started with the tiniest hum in the back of her head. She had woken up after the procedure in a strange bed, covered with a starchy blanket, dazed, disoriented, and with the distinct feeling that something was not quite right. Of course, she couldn't pinpoint where that feeling came from just yet. And soon the doctor would assure her that it was normal to feel a little unsettled after this type of medical procedure. That her brain simply needed to adjust to

the additional pathway to her memories. It had all sounded very plausible to her, so she put the unsettling feeling to the back of her mind and continued with her life.

It had taken her three weeks to actually notice anything was off. She had just finished her last class at the academy before lunch and was walking to the cafeteria with her classmates when she consciously noticed it for the first time: A distant hum in the back of her mind. Like a hummingbird was following her around, but keeping its distance at all times. Just out of reach for her to locate where its source was. She looked around, trying to figure out where the humming was coming from, but couldn't find anything that seemed a likely source. Just a couple of students walking toward them and a cleaning robot mopping the floor at the end of the hallway.

"Do you hear that humming? It feels like my brain is buzzing or something," she asked her friends.

"Hear what? Are you feeling okay?" was the only reply she got, accompanied by such a look of suspicion that she quickly dropped the topic altogether.

That was another thing that had come out of the past decades: A deep distrust of anyone who showed even the slightest deviation from the norm. Recent developments in the medical field also meant that they were all supposed to be the picture of perfect health, both physically and mentally. Common colds, heart palpitations, anxiety, even cancer, were all things of the past. The only acceptable diversion from the healthy ideal was when one of your medical implants, your memory chip, or your implanted health tracker malfunctioned.

But this didn't feel like a simple malfunction. With malfunctions, you could almost always pin down exactly what was wrong. But this felt different. This was the distinct feeling that something was wrong, but what that something was, remained just beyond her reach.

She was studying to become a data scientist to follow in her father's footsteps to become "a keeper of the system", as he called it. According to him, data was the foundation of our societal system, so analyzing it correctly could decide the future. The medical data that was collected from every citizen through their health-tracking implants in their upper arms, as well as the environmental data collected through their complex filter-system that was distributed throughout every building in the city, meant that they could predict any abnormalities in the system months in advance. It was how they had prevented the last influenza outbreak from spreading. It was also how they determined who would be most useful to society. Using your medical data, they determined whether you were fit for manual work, or whether you would be more useful working a desk job somewhere.

In any case, after a long class of analyzing complex data collection systems, your head was prone to spin. So she attributed the humming to mental exhaustion and continued with her day.

The next time was much harder to ignore. She was sitting at the kitchen table, eating dinner, when she heard the humming again. Only this time it seemed to be louder, more defined. She still couldn't quite make out what the sound actually *was*, but it had an almost musical quality to it. Its volume and pitch varied in a rhythmical fashion. Again, she looked around her to find what might be causing the noise, maybe an electrical appliance that was still turned on. But the only thing moving around the kitchen was their housekeeping robot, which was currently cleaning up the remnants of her dinner preparation. Dissatisfied with not being able to figure out where the humming was coming from, she resolved to pay more attention the next time it appeared. Maybe if she could make out a pattern of occurrence, she could figure out where it was coming from.

With this in mind, she started to study the sound more closely. She was invested now, and figuring out the source of the humming became her main interest in life. She documented her observations dutifully in a small notebook she had found at the bottom of her bookshelf. After a while, she did notice a pattern, although she didn't grasp the consequences of her findings quite yet. The sound seemed to appear whenever she was in the proximity of one of the robot units. The humming also seemed to appear more frequently and louder the more attention she paid to it. Eventually, it felt like she could almost identify the humming properly if she concentrated hard enough. But whenever she came close, something or someone around her made a different noise and she lost the close connection to the humming. The problem with this pattern was also, that since the robot units were incorporated into almost every aspect of daily life, it was hard to pinpoint what exactly triggered the humming.

In fact, she didn't figure out this missing link until one evening when she was on the way downstairs to get a glass of water before bed. As she was walking down the hallway to the kitchen, she passed the storage unit. Or, they called it the 'storage unit', but more accurately it was where they stored their canned food and cleaning supplies. In that sense, it was more of a broom closet than anything else. It was, however, also where the charging stations and data collection units for the housekeeping robots were.

As she was walking past, she saw two of their housekeeping robots in there. One appeared to be trying to dock up to its charging station, while the other one was currently plugged into the computer unit at the back of the room, where the units uploaded the data they collected throughout the day. This data was used much in the same way as all data in their society was, to keep track of food and energy usage, as well as potential health risks.

As it was, the first robot seemed to be struggling with docking up to the charging station, attempting several times to connect to the charging plug, without success. She thought maybe it couldn't locate the exact position of the charging port, maybe the port had moved a little to the side and now the robot's AI couldn't figure out how to calculate a new route to connect.

While that seemed unlikely because of how advanced the AI system was, minor hiccups in the programming had caused bigger issues before. So, she went over to the robot to see what the problem was. As she was crossing the room, she noticed that the humming became louder and also more distinguished the closer she got to the robot. Strangely, she thought that it almost had the same rhythmical quality as language. There were the rhythmic ups and downs of pronunciation, mixed with a more electrical, almost mechanical, buzzing quality.

When she had reached the robot, it lifted its head, almost as if it was giving her a quizzical look. Or, at least she had always thought of the display mounted on top of the rest of the robot as its head. To her, it looked almost like a head with the thinner connection tube containing all the wires acting like a type of neck – but she also knew that her siblings had laughed at her when she called the display the robot's 'head' when they were younger. Apparently, the similarity wasn't as striking as she had thought. Not to mention the disapproving look her parents had graced her with when she had mentioned the similarity to them. After that, she had stopped calling it that, but now she couldn't help but notice the similarity again.

The robots operated within a rather simple communication system, at least when it came to communication with humans. They simply displayed words, sentences, or icons to convey what they wanted to say – in this case, a question mark. The communication system between robots, on the other hand, was on a whole different level. Her father had tried to explain it to her countless times, but still, she had never quite grasped the finer details of it. Simply put, they were connected to a bigger system, where they could all share and retrieve the data they collected each day. Mostly they used it within the household sphere to keep track of groceries and to trigger new grocery orders if necessary. But on a larger scale, they could also contact authorities if, for example, someone was sick or if there were any relevant issues with the technical systems within the house.

The plug of the charging port had become loose, which had caused the connection issues, so she quickly reset it to its default position, and the robot connected to it without issue. It displayed a happy smiley face and the word 'thanks' and then went into standby while charging. To her surprise, she noticed, that the humming changed rhythm, pitch, as well as volume when the robot's display had changed. Now, she was thoroughly intrigued. Was the humming directly connected to the robot's communication system? Was the humming maybe just resonance with the frequency the robots communicated on? Or did it mean more?

Over the next few days, she paid even closer attention to the humming and intentionally triggered more 'communication' situations with the robots both inside their household, as well as outside at the academy or the library. She documented her observations in her notebook after each interaction. After a few days she had established that, yes, the humming was indeed directly linked to the robots' communication system. Whenever her interactions triggered them

to access their database to retrieve data she had asked about, or when they had to communicate with other units in order to fulfill her requests, the humming was also triggered.

Since the robots were designed to be more of a silent support for the system, her little experiment quickly gained attention. The robots were supposed to help maintain their buildings and technical appliances, as well as assist with medical tasks or simple ordering or shelving tasks at grocery stores or libraries. The only real interaction that was supposed to happen, was data retrieval or input. You weren't supposed to interact with them in such an elaborate manner as she had done over the past few weeks. Accordingly, people kept asking her if everything was alright or if the robots were malfunctioning. They simply assumed that the increased interaction meant that the robots somehow weren't performing their tasks properly, so more interaction than usual was required. It was easy for her to play her little experiment off as simply that – as a response to some malfunction or issue with the robots. Or, at least she thought she had played it off that easily. Her current situation suggested she had not been as successful in playing off her unusual behavior as she had thought.

But the real surprise came when she was relaxing on the couch one evening. She had just requested a cup of tea from one of the kitchen robots through the remote ordering system of their house. The robot had come in with her tea and she was in the process of taking the cup from it, when – out of habit – she thanked the robot for his services. Suddenly, the humming wasn't really a humming anymore. It sounded suspiciously like a distorted version of 'no problem'.

"Wait, what was that?" she exclaimed. But the robot only turned around to return to the kitchen.

"Wait!" Now she was standing in front of the robot again. The humming returned once more. This time, it sounded like a 'what' mixed with some other sounds she couldn't clearly identify. The robot's display showed a question mark.

"What kind of tea is this?" She figured her best chance of figuring out the strange mix of electrical humming and words was to keep asking the robot questions. She was so excited, that she didn't even stop to think about *what exactly* she was doing right now. She just kept asking questions.

"Did you put sugar in it? Can you tell me the nutritional values of the tea you used?"

With each question she asked, the warbled speech became a little clearer. Until at last, it seemed like she could finally understand what the robot was supposedly trying to communicate. Sure, it was still distorted and sounded more like a bad recording of a text-to-speech device, but it was still closer to speech than anything else.

In her excitement she just kept on asking the robot every question that came to mind, it wasn't even only about the tea anymore. She asked what time it was, what the weather would be like tomorrow, and if they still had her favorite type of pasta so she could make it for dinner.

She didn't even notice her father had entered the room and was looking at her with equal parts confusion and suspicion until he called out to her.

"What's going on? What in the world are you doing?"

She was so excited by the possibilities this new level of communication opened up, that she forgot for a moment that she wasn't supposed to be talking to robots like this at all.

"Dad! Can you hear that? The robot just talked to me! And *I can understand it!*"

Those were the very words that had landed her in this holding cell, waiting for the authorities to figure out what to do with her. After that, everything happened so fast. Her father had apparently noticed her experiment a while back and had harbored a growing suspicion that there was something wrong with her. He didn't say it, but she knew he was wondering whether she had gone off the deep end, talking to robots *and expecting them to answer*. He had called the authorities so they could examine her, to find what was wrong – and, of course, to *fix* her once they identified the issue. Now, she was waiting for them to finally make an appearance, so she could figure out what *fixing it* entailed exactly. While she waited, she sorted out the puzzle pieces and finally came up with a more or less sound conclusion. The memory chip must have somehow established a link between her mind and the communication system the robots used. This must be why she had heard the humming in the first place. As to how this link had been established, she didn't know. Maybe they had developed a new version of the memory chip that somehow tapped into the larger communication system to store memory more accurately. Maybe the memory chip was part of –

Her thoughts were interrupted by the sound of the mechanical door opening.

"*Talking* to robots, huh?"