

*Can't always tell what I want, but always do what I tell you  
Isn't like you were free before this situation befell you*

Walking down the sidewalk, Howard Phillips reached into his pocket, making sure his payload was still there. He had just gone to the library to print out some electrodes, since his printer at home didn't support the necessary materials. He had learned the other day of an online community of neuroscience hobbyists who had apparently achieved rather impressive results using these custom electrodes. Being intensely interested in the idea and having a surplus of free time, Howard decided to try it out.

Upon arriving at home, Howard dumped the electrodes into a mixing bowl full of isopropyl alcohol. He sat down at the little operating theater he'd prepared at his kitchen table: a few scattered pills, dermal injectors, and other assorted implements of medicine; a washcloth, a robotic manipulator and a small MRI head cage, both secured to the table with vices; a drill, and a bottle of vodka. Only after downing a third of the bottle on the table did he stuff the rag in his mouth, put his head in the MRI cage, and run the program he had thrown together over the course of the past few days.

It was, for the most part, several pre-existing programs working in tandem. The software necessary for the surgery itself had already been written – Howard hadn't needed to do much more than get it to work with his old Hitachi manipulator, and get the software acquainted with the intricacies of his kitchen. And it seemed to be working so far. The manipulator grabbed a dermal injector, not appearing to take any time to consider which one. Rotating towards Howard, it applied the injector to several places on his head, each time shooting a bit of its contents in through his pores. He felt a tug on his filling as the MRI kicked on, magnetically herding the cheap disinfectant 'crobies through his blood vessels to where the program thought they were most needed at any given moment. The manipulator then rotated away from Howard, out across the kitchen to the counter 3 feet away, and plunged its hand into the bowl of alcohol. When it came out, it was holding a small knife. It swung back around the way it came, turning as it did so, and in one smooth motion it sliced all the way around his head.

Howard was unconscious for the rest of the operation. He awoke at 11 PM feeling generally like shit. It was a combination of a mild hangover, soreness from having slept in a hard kitchen chair for seven hours with his head in a vice, and having just had what was practically brain surgery performed on him by a ten year old manipulator arm controlled by questionable software. Looking in the mirror, he saw that the robot really had done a pretty bad job of sewing him up. Some of the stitches had actually come undone while he was sleeping. Going to the hospital, though, would have been both expensive and an admission of defeat. Instead, he bound up the wound, threw open his laptop, and called up the first person he could think of with medical training who'd be able to fix him up cheaply.

"Howard, this better not be about those pills. I told you I can't get any more, they stopped using those mechanical locks on the supply cabinets."

“Hello to you too, Cynthia. And no, it’s not about that. I just need to come get some stitches.”

“What? Why, what happened?”

“Well, I found this group online who’s been working on a neural interface that can be surgically installed at home –“

“That’s really stupid, Howard. Do you know how many patients I see come in who tried that home surgery shit to save some money, and ended up with horrible complications?”

“Well, anyway, it’s done. Can you help me or not?”

“Fine, but only because I wouldn’t be comfortable letting you die of some infection from that disgusting apartment. Did you at least do the dishes beforehand? You know operating rooms are supposed to be at least somewhat sterile, right?”

“Nope, covered them with a tablecloth. Be right over, thanks.” He hung up before Cynthia had a chance to continue, and was out the door.

Over the course of his lurching journey down the stairs, Howard managed to summon a taxi for one from his phone. The app said it wouldn’t be there for another five minutes and fifty two seconds (the taxi company insisted on estimating arrival time to the second, even though it was almost always off by at least ten), so he opted to wait outside on the benches. Opening the doors, he was greeted by gale force winds and, despite it being almost June, temperatures barely above freezing. He’d been outside earlier just that day, and it had been in the 70s. Fucking New England. He decided to wait indoors.

Slouching against a wall, he perused the neurotech forum. It had no name that he knew of, and the URL was just a string of unfamiliar characters – many of them little more than random messes of pixels – ending in “.ogre”. That style of URL wasn’t especially unusual as far as meshnet sites went, since many mesh protocols – the ogre protocol being one of them – generated the URL pseudo-randomly by default. What was unusual was the lack of a name, even an informal one used by the site’s posters. Beyond that, even with a browser configured to use the ogre protocol – something most people had never even heard of – the pages themselves were encrypted, so the site just showed up as unformatted gibberish. It was only because the person who sent him the link had also sent him a decryption key that he was able to view the site at all.

After a minute or two of browsing through threads describing various bits of code written for his recent acquisition, he decided on one to install first. It was a fairly simple, not really practical file called VisionTest.mod, intended to cause flashes of white light to spring up across the user’s vision while it ran. Better to get himself used to the whole idea before doing anything too extreme. He downloaded the file, and opened it in a piece of software called

Synapse, which he had installed from the site a few days earlier. A terminal window popped up.

looking for implant array . . .

array found

connect to implant array . . .

connect successful (0.57 ms)

checking implant systems . . .

power generators active, glucose level meet power requirements

EEG active, sampling rate ~530 kHz

all systems okay

all implants okay

unpacking visionTest.mod . . .

This was the first time in a fair while that he could have described his mood as “giddy”.

unpacking complete

building neural link . . .

ERROR: CONNECTION FAILED: circuit VGA01088796b26 not found

ERROR: CONNECTION FAILED: circuit VGA03156984f87 not found

ERROR: CONNECTION FAILED: circuit NGS00000634a02 not found

Thousands of such errors streamed past, too fast to appear to be moving. The words all stayed the same, and the names for the circuits flashed randomly, almost like static on an old tv. He closed the window and looked in the software documentation to see if there was something he had missed. He quickly found what he was looking for: apparently, he needed to run something called “circuit mapper” before he did anything else. As it happened, the circuit mapper was included with Synapse. He opened it.

“You must have at least 35 terabytes vacant before starting this program. Do not have anything important planned for around 3 hours until completion. Enter Y to continue.”

Fuck, 35 terabytes? This thing was going to fill up most of his phone’s storage. And what did it mean by “Do not have anything important planned”? What did it consider “important”?

His phone chimed, telling him his cab had arrived. He looked off into space for a moment and, after considering his options, gave a half-sigh and twitched his left ring finger, his wristband interpreting his tendon movements and outputting the letter Y. He slid the phone back into his pocket, pushed himself up, and walked out the door.

The wind had died down considerably, making the 30 foot walk from his building to the yellow enclosed motorcycle balancing next to the sidewalk fairly pleasant. It was around halfway to the taxi that Howard's finger twitched again, this time involuntarily. He thought nothing of it. He was preoccupied by a different realization: the area outside his building smelled like the house of one of his childhood friends. He wondered how that could be, since it wasn't the type of smell one usually encountered outdoors. He reached for the door of the enclosed, driverless motorcycle. As he touched the cool metal of the handle, he was reminded of the time that very same friend ran over his cat pulling out of Howard's driveway when they were 16. No, "reminded" wasn't the right word: the memory popped into his head far too abruptly, seemingly out of nowhere, and vanished in the same way. It didn't feel natural. Neither did the sense of vertigo he felt as he climbed into the seat, or the synesthetic cacophony that began as the door closed.

Cynthia walked out onto the sidewalk, wondering what could be taking Howard so long. She stood at the edge, looking down through the elevated road at the rest of Boston below her. It was a mess of mostly-transparent roads, weaving under and over each other, joining up with the sides of the buildings and occasionally punching straight through them. The city had added these streets as an attempt to make their clusterfuck of a road system easier to navigate, but in practice giving the city a 3D arrangement just made it more confusing. Not that it really mattered, since they outlawed manual vehicle control within city limits soon after, to let people make the most of modern bikes' ridiculous speed and maneuverability. Glancing upward, she noticed a taxi sitting on the edge of the road that must have been there the entire time. She walked up to it and hesitantly opened the door, revealing Howard's bloody-faced, wide-eyed, contorted form, shaking like he was having a seizure.

Cynthia pulled out her phone, along with a pen-like medical scanner, and pointed the scanner at Howard while watching his medical data flow across the screen. It looked like a seizure, alright. And not only were his muscles seizing up, his autonomic functions seemed to be becoming irregular as well. As she watched, she saw his heart sit still for a full 3 seconds before spasming. She had to act fast. With great difficulty, she dragged him out of the car and layed him face down on the street, straddled him, and pulled from somewhere in her white coat a pocket knife and a small disc-shaped device with a thick black needle sticking out of one side. Howard wasn't going to be happy about this (assuming he wasn't already brain damaged beyond repair), but it was better than risking letting him die. She put the knife and the device up against the back of his neck, and plunged both of them between his vertebrae and into his spine.

He stopped thrashing, apart from his head. He stopped breathing, and his heart stopped beating...for a second, anyway, until the autopith kicked on. His breathing was now slow, rhythmic, the tempo perfectly steady as the pith stimulated his spinal cord, keeping his vital organs functioning in lieu of a connection to the brain. She took a moment to rest, looking down at his mostly-motionless form lying on the transparent asphalt, silhouetted against the bright lights of the city below. In all the commotion, she hadn't really gotten a good look at his head. With all his thrashing, both his bandages and his scalp had come off, revealing – what was she looking at, exactly? His skull, obviously, but what were those grey things scattered across it? Were they...screws? The parts that were visible certainly did look a lot like the tops of screws. She would have to ask him when he regained consciousness, and the ability to speak easily. He would survive. Now she just needed to drag him to the elevator – and then from the elevator to her apartment – and then treat him. It was going to be a long night.

Howard popped back to reality quite suddenly, noticing first that he didn't know where he was, next that he couldn't feel anything below his neck, and then that he was, in fact, in Cynthia's apartment, which she used as a clinic. He could remember getting into the cab, and then – what? He did have a vague memory of the past few – minutes? hours? – between then and now, but it was really only a feeling that he couldn't describe; no details at all, like trying to remember a dream.

“What hahhh-“

Finally, he realized that he was not in control of his own breathing.

“...pened?”

He heard Cynthia's voice from off to the side, but couldn't turn towards it.

“I'll just tell you the whole thing, so you don't have to waste your breath asking any more questions. I know how hard it is to talk with an autopith. You were having a seizure. Your breathing and heart rate were becoming erratic, so I had to sever your spine and stick in an autopith to prevent tissue damage. I've got a cell culture going, and it should be ready in a couple hours, but once the cells are in your spine it'll take a few weeks for them to mature enough to let you move around freely. Your scalp fell off in the cab, and it's disinfecting now, but it got messed up pretty badly. I guess you really mashed it into the floor during the seizure. I'll need to replace a lot of the skin on it, and I don't have the equipment to do hair follicles. You'll have to go to a hospital for that, if you can afford it. And the crobes you used are awful. You could have gotten sepsis.”

Okay, so he was paralyzed, and there was an autopith in his neck controlling his breathing. That made sense. And now he was going to be partially bald, okay, so he'd either look like he had mange, or he could shave his head and look like a nazi. Not the end of the world, he could always wear a wig or something. But a few weeks just to be able to move? That would

be awful. Then an idea popped into his head. He waited and paid careful attention to his breathing, trying to get the timing just right, and finally said "stimulator bands?"

Cynthia looked puzzled. "I might have a set lying around somewhere, if that's what you're asking, but even when they were in common use, they were only for physical therapy. There's not a neural interface in the world that'll let you use them for much more than flailing around, and for most people the sensory feedback doesn't work at all."

"Seen thread...about it...works okay...with the implants."

After several tedious hours of Howard telling Cynthia what software to install and exactly how to configure it, and another ten minutes or so of Cynthia applying the old stim bands to various places on his body, Howard was able to stand on his own, if rather unsteadily. He was even able to breathe on his own, since the autopith happened to be one of the fancier models with built-in wireless control. But he still couldn't feel much below his neck, and more importantly, he had no proprioception, no sense of where his body parts were. He could move his arm, but he couldn't feel that it was moving unless he was actually looking at it. It reminded him of an experience he had had years before, where he had used a setup that let him control a robotic arm with an EEG headset. While this was more precise, and at least provided a pins-and-needles sensation when he touched something, it gave him the same sense of the arm not really being part of him. Even though he was able to move it, and even though this time it was his actual arm. As though it was just a device he was using.

"Jesus, Howard, I didn't think this was possible," Cynthia said, shaking Howard out of his reverie. "What are those things in your head? Where did you find plans for something like that?"

Howard prepared to describe the site he had found them on, but he suddenly felt strangely hesitant to give much in the way of detail. "Just on some site I found."

"Have you checked to see if it sent any data out? What if this whole thing is some crazy identity theft scam?"

Howard chuckled as he opened a traffic monitoring app, amused at the thought of freely distributing such a massive breakthrough just to steal social security numbers out of people's heads. His smile quickly faded when he saw the number beside Synapse. The Synapse brain management system had sent out data. Almost 34 terabytes, in fact, had gone out over the mesh to some unidentified destination.

He quickly opened Synapse and checked the log for the seizure-inducing configuration process. The circuit map it had generated was just under 34 terabytes. It had sent what for all he knew was a working model of his brain to god-knows-who.

He knew he *should* be shocked and terrified that this had happened. After all, there might be

a copy of his mind being tortured on a server somewhere at that very moment. That was an actual possibility. But why would there be? Wasn't it more likely that they just wanted his neural map for research purposes? Clearly, a project this ambitious would need huge amounts of data. And it was true that he wasn't told this would happen, but undisclosed data-gathering wasn't all that unusual. In fact, maybe it was mentioned somewhere, and Howard had just missed it. There was a lot on the site, and he had certainly made no attempt to read every bit of it. At any rate, it seemed unnecessary and even a bit silly to go back and look for a mention of this anomaly now. It was time to focus on the positives: he had an actual cyborg brain, a forum full of software to mess with, and all with practically no one else who knew about any of it. The situation was too perfect, too convenient. He'd have to be a fool to not take full advantage of it.