

"With every tool, man is perfecting his own organs... by means of spectacles he corrects defects in the lens of his own eye; by means of the telescope he sees into the far distance... With the telephone he can hear at distances which would be unattainable even in a fairy tale... Man has, as it were, become a kind of prosthetic God. When he puts on all his auxiliary organs, he is truly magnificent; but those organs have not grown on to him and they still give him much trouble at times."

- Sigmund Freud, from *Civilization and its Discontents*

Bodyware

Panel: During your admission to Stanford, it has been noted that your application is irregular. There are those among the panel who believe that admitting you is too much of a risk, and would set a dangerous precedent.

Applicant: I will gladly participate in any further aptitude tests the panel deems necessary.

Panel: It is not your test scores we are concerned about, indeed, under normal circumstances they would be considered extraordinary. But given your...handicap, they raise disturbing questions.

Applicant: I'm ready to answer any questions you may have.

Panel: It says in your transcript that, quote, [REDACTED] underwent *brane* implementation surgery '38 times' prior to successful harmonization. Is this correct?

Applicant: It is.

Panel: And the procedure was finally successful when you were 10 years old?

Applicant: Correct.

Panel: Now, this all begs the question: How were you able to keep passing the tests at the same rate as those who had undergone the procedure?

Applicant: My father gave me a Medafocrine stimulant. This allowed me to go without sleep for 60 days at a time. I studied hard.

Panel: An extreme solution.

Applicant: It was either that, or never catch-up. The other kids were already undergoing second-phase procedures, and we knew that I had a narrow window in which to close the gap before my classmates accelerated out of reach.

Panel: And in this way you were able to keep up with the testing schedule without being re-assigned to a lower tier?

Applicant: Yes, professor, though of course I was bottom of my class.

Panel: Of course. Now, I must ask, we've all now parsed the file on Medafocrine... it makes for some rather alarming analysis. I presume there were side effects?

Applicant: There were.

Panel: Please elaborate.

Applicant: Hair-loss, migraines, I lost a couple of toes. And I'm blind in one eye.

Pause.

Panel: Do you consider the trauma of these side-effects to have affected your mental health?

Applicant: No professor, I have published a number of code repos on dealing with trauma, three of them have more than 200 million users.

Panel: Yes, as I said, we don't doubt your abilities. How long did you take the stimulants for?

Applicant: Six years.

Panel: The maximum recommended course is six months.

Applicant: My father and I reviewed the evidence and found it lacking.

Panel: By my calculations that means you slept 36 nights in six years...

Applicant: Actually it was 11 nights.

Panel: Excuse me?

Applicant: 11, professor. I skipped a few scheduled sleep cycles.

Panel: For what possible reason?

Applicant: Couldn't sleep, I guess.

End Transcript.

He was leaving the dorm for the first time in what felt like years. He queried his *branes*

@CT @branes: when was the last time I was outside?

The response slid into the center of his vision:

<Been a while you hermit, you've been cooped up 2 months, 3 days>

That sounded about right. CT was momentarily dazzled by the sun before his *branes* adjusted the glare down a few notches. Campus was almost deserted. The odd student was heading to the central op-room, and CT's *branes* projected their statuses onto his vision, giving the illusion of text floating above their heads ('*last jump of the term, finally!*').

@CT @branes: replay the route to Sam's room from e-memory

He crushed the ads which tried to swarm in front of his vision as he accessed his externalized memories. His *branes* parsed the video recordings in a nano-second, and he became aware of where he needed to go. As he began to walk, he brought up a problem he'd been working on and his status immediately changed to 'working'. He'd been making good progress on this assignment, the whole year group had. Since the Fundamentalists released the virus last week, CT and his classmates had coded a pretty decent program to counter it. He grimaced and rapidly rewrote a sloppy section from another hacker. A couple of seconds later the classmate messaged him with an apology for the weak code. Mistakes were no joke. Code flaws could get a user killed. His *branes* flashed another update in green across his whole vision:

<Code contribution accepted. Payment received: \$278,000>

He resumed.

But he was distracted. Sam was throwing a party and had said he wanted CT to go, but CT was struggling to summon much enthusiasm. Sam would be pissed off if he attended virtually, he was odd like that. Old school. He blinked twice in rapid succession and the code vanished from his vision.

@CT @branes: how pissed off would Sam be if I attended virtually?

<Oh c'mon? Are you really asking?>

@CT @branes: yeah seriously

<Based on all e-memory records of Sam, you've probably got the following likely consequences if you wimp out>

<1). 2-3% loss of overall trust and closeness>

CT whistled, Sam really did care about this stuff. He waited for the other scenarios.

<2). 7-10 days of forced radio silence>

<**Program interrupt.** Immediate danger detected. Threat Level: Unclear>

CT immediately began looking around his surroundings, starting up hundreds of environment analysis algorithms. There. A girl had just rounded a corner to enter his field of vision 50 meters away. His *branes* highlighted her in red. She was walking towards him. He zoomed in on her pupils and analysed her gait. His calculations left very little doubt that she was seeking him out. He looked up her file and her name appeared in his vision: Sandy Cheng. Yes, now he remembered. She was in his year. He ran another query and her coding rank appear next to her name 715. A solid performer, but still far from being a star. By now she was nearly in front of him.

@Sandy: hey @CT, sorry to interrupt your work, I'm right next to you, can you talk?

@CT: Sure.

"Hey, Sandy", he said, doing a well practiced imitation of snapping out of a coding haze.

"Hey," She replied, smiling with enthusiasm. "Are you heading over for a jump?"

"No, I'm done for the term," he replied. He didn't even need to query his *branes* to know that the question was a conversation starter. The jump-schedule was freely available online.

"Oh good for you," she flashed him another smile with her Zone A perfect teeth, "By the way, congratulations. I heard that you guys shipped an antidote,"

"Sort of, we still need to iron some things out before we can release downstream to C and D", replied CT.

"Well, from what I heard, it's a speed record." She looked at him expectantly. He remained silent. "CT," she resumed, sensing his desire to leave, "I wondered if I could ask you a massive favor?"

He cracked her. His *branes* began working furiously as he parsed her *brane* footage from the last 5 days in a nano-second. The search algorithm found what he was looking for: a conversation with the university publicity app architect. He didn't have time to watch the footage mid-conversation, but his systems created a condensed summary which flashed in front of his eyes:

<Sandy is attempting to create a sensationalist piece of journalism about you.
It will damage your reputation>

Without missing a beat he gave her a smile and said,

“Look Sandy, I’m really sorry, but I’ve got to go,” He began to turn away.

“My editor has ordered me to put together a story about you”, she said quickly, lightly touching his elbow as though to spin him back towards her.

“There’s really not much to say. I’m just a shy hacker”, CT said, still half turned away.

“Oh c’mon, you can’t even say that with a straight face,” Sandy replied, “You’re so mysterious...the top rated Stanford hacker two years in a row, but no one knows anything about you. Well...apart from the fact that you didn’t start your op program until you were 10 years old. And that makes us even more curious! Everyone is dying to know how you did it.”

“Sorry Sandy, I really have to go,” CT gently moved his elbow free of her grip. She stared at him, and her tone changed,

“We’ll release the story anyway, and if you won’t talk to us, then we’ll just have to make some inferences, maybe use an avatar. Wouldn’t you prefer to share your side of things?”

An alert flashed in front of his eyes:

<You are being blackmailed. Run diagnostic?>

He flicked a quick glance and the diagnostic began running. He was dimly aware of his *branes* analysing huge amounts of Sandy’s personal information in less than a second. Profiling algorithms ran. Weaknesses were assessed. Instantly, his recommended options flashed before his eyes:

- <
- 1) 72% resolution chance – you can help her grandma with a health issue
 - 2) 20% resolution chance – threaten her
 - 3) Multiple low chance solutions – expand?
- >

CT was momentarily stunned at how low the effectiveness of threatening her was, so he rapidly looked into some of the data behind the calculations. He mentally recoiled as cracked video snippets from her childhood showed countless instances of aggression from a violent father, and how her coping mechanism had been to develop a pathological refusal to back down in a confrontation. It was this resilience which had got her onto the most competitive program not just at Stanford, but in all of Zone A.

He began exploring her grandma’s situation. She had a rare form of bone marrow cancer, and the *swimmer* code to fix it was prohibitively expensive. Writing code for

molecule-sized machines like *swimmers* was incredibly complex, and the price of the code reflected this. CT's *branes* parsed the code and auto-corrected a series of inefficiencies, removing over a thousand bugs. The price of the code immediately halved. This all occurred before Sandy knew he had stopped looking at her. He flicked the file to her.

"What's this?" she asked, frowning. Her eyes took on the slightly distant look of someone reading information sent from their *branes*.

"That should help your Grandma. I'd really appreciate it if you could keep the app about me nice and boring." He turned and rapidly began walking away. Sandy remained rooted to the spot, unable to speak.

He was about half a mile away from her when she sent him a message:

@Sandy: @CT...I don't know what to say. Thank you so much...Forget about the app. Maybe message me sometime?

@CT: Maybe. Good luck with it.

He breathed a sigh of relief and carried on to Sam's dorm. This party had better be good.

CT always had a bad feeling about parties with lots of hackers. Nothing that his *branes* could put a percentage on, this was all gut. After walking through the front door of the house, he was now certain his instincts were right. The place was full of hackers tripping on *drowners*. Many were sitting down with stupid, blissful grins on their faces. CT found it horrifying. Those were obviously poorly coded drugs. He gave a start as he received a backslap,

"CT! I was worried you were going to pull some virtual attendance bullshit," Sam grinned at him.

"It may have crossed my mind," CT replied. Sam gave him a concerned look, "what's wrong, CT? You look like you just fucked your mother."

"Do you remember the last party you dragged me to?" CT replied. Sam shrugged,

"I'd have to look through my EM".

CT raised an eyebrow and flicked him a recording from a similar party they had attended during their freshman year. His *branes* edited the file on the fly to show the exact moment where Sam claimed the party 'would be awesome', then rapidly fast-forwarded to the arrival of paramedic drones.

"Dude, do you just have a stash of files marked 'I told you so' pre-edited?" Sam asked.

"Yeah, and I've got a special one ready for when you get Zone B Herpes," CT replied.

"Bastard," Sam laughed, "Come on, do you want one of these *drowners*?"

"Who coded it?" replied CT.

"I think Martin cooked this up," said Sam, who proceeded to open a three-way-chat between them

@Sam: @Martin, did you cook these drowners?

@Martin: Yup – oh hey, @CT you're here! You legend, I didn't know you'd come in the flesh. I'll come down and say hi.

Martin appeared from the top of a staircase, he bounded down with excitement,

“CT man, it'd be awesome if you could tell me what you think of these,” he began, “I think I perfected the feelings of inebriation and being stoned, the code coaxes all the right chemicals out of the user's *swimmers*, but all the usual nausea is suppressed,” he continued, nodding his head repeatedly. Concealing his reluctance, CT publicly checked-out the code so Martin could see him browse it.

“Nice man, I like what you've done,” he said, giving Martin a sincere look. Martin had that faraway of listening to his *branes*. CT realised too late that he was running an intonation check on what had just been said. Martin's eyes suddenly snapped back into focus and he gave CT a mock-hurt look,

“No dude, tell me what you actually think. Seriously.”

CT sighed, and brought up a shared view.

@CT: Look, if you rewrite this section then the swimmers will release the THC into the user's bloodstream in a more controlled way. You have to let the body adjust to the stimulus, otherwise you might trigger vomiting.

The sound of someone extravagantly vomiting in a neighbouring room punctuated the exchange, brutally emphasising CT's point.

@Martin: Oh man, that's way better. You mean this section here, right?

@CT: Yeah, that's it.

Martin broke off the connection. The exchange had only taken a second, but Martin's demeanour had changed. His shoulders slumped, and he looked at the floor. Sam came back over and looked at Martin,

“Martin, you OK?” he asked,

Martin started and looked up, “yeah man, great,” he said, not making much eye-contact, “hey, I just wanna go and check everyone is doing OK with the *drowners*, I'll catch you guys later”, he said, wandering off.

Sam gave CT a look,

“What the fuck did you say to him?”

CT scrunched up his face and flicked Sam the recording of the conversation.

“Oh ouch,” Sam said, wincing. “Dude, you can't just get all Mozart on people like that.” CT nodded pessimistically, and Sam passed him a beer. “Random question for you, CT,” said Sam, “you ever parse the files on Don King?”

“Let me check”, replied CT, his eyes glazing slightly as he looked through his files, “I mean, obviously he's the last Zone A hacker to be tech-jacked, so there's a ton of info on the guy,”

“Yeah, but I was looking at some the reports recently, and it’s just weird. No one ever found any of his bodyware – like the Zone C police would usually find *something*,” said Sam.

“True, that is odd,” nodded CT, sipping his beer.

<<ALERT: CRACK OFF INITIATED>>

CT leapt to his feet, “shit, Sam, did you get that?” Sam was frozen in horror. Snapping out of the video feed Sam lurched to his feet,

“Oh nonono, this is not good!” They both began running to where the announcement had come from. Sam glanced at CT:

@Sam: @CT don’t give me that look

Crack-offs were illegal, but like fights, they happened from time to time. Since the average Zone A citizen had millions of dollars of technology incorporated into their body, it was just as easy to attack them with code as it was with fists. With hackers, this was truer than ever. Sam and CT ran out into the back garden of the house, where a small circle had gathered around two men who were obviously getting ready to crack each other. CT parsed both guys and found that they were two Computer Science sophomores. A little more data mining revealed that the conflict adhered to a classical model: It was over a woman.

“You’re a motherfucking liar!” screamed one man, who CT identified as Tom Resig. A quick skim of Tom’s e-memories told CT that he had never been in a crack-off before.

“That slut knew what she was doing. She blew me the morning after, too,” replied the other man, his face sneering. His *branes* projected the event he was alluding to from his e-memories, creating a giant 3D point-of-view hologram of the woman in question performing a sex act. CT noted that this guy, Lindon Summers, had over 32 crack-offs under his belt. He’d lost once, about four years previously.

Like all native Zone Aers, both men were about 6’6”, square jaws and wide shoulders. But there was no posturing, no pushing. Instead, Tom snarled and threw a chunk of vicious code which was invisible to the naked eye, but which the assembled crowd could parse and analyse using their *branes*.

@Sam: @CT That’s actually quite a good effort.

But it wasn’t going to be good enough. CT had been parsing all Lindon’s previous matches, and he had faced far harsher cracking attempts and survived. It was obvious that Tom’s textbook attempts to find a backdoor into Lindon’s systems and gain access to Lindon’s biological APIs were too predictable.

@CT: @Sam No man, I think Tom’s fucked.

About a second passed, and Lindon had Tom's attack completely quarantined. He struck back. CT winced as he ran an analysis of the code heading towards Tom. It was a clever approach, a crushing load of data piped at Tom's *branes*, designed to cause them to shut down long enough for Lindon to seize control. Within moments, Tom's face was twisted in panic as his *branes* struggled to cope with the load. CT watched as Lindon expertly took control and triggered Tom's *swimmers* to release a nasty cocktail of hormones. Tom's eyes rolled back, and he slumped to the floor unconscious, blood trickling from his left nostril.

The assembled crowd whooped and cheered at the victory. But CT was still watching Lindon. He'd noticed an alarming pattern in Lindon's past few crack-offs, a sadistic tendency to further humiliate a downed opponent. These cheap attacks had been growing more dangerous. Sure enough, a quick diagnostic showed Lindon lining up a vicious follow-up attack which would cause minor kidney failure and erectile dysfunction for months. Lindon launched the malicious code, and CT flicked a firewall up around Tom's systems. Lindon snarled,

"Who did that?"

"That's enough, Lindon," replied CT, "you've won."

"I decide when I've won," replied Lindon, his eyes narrowing. CT squashed a complex web of probes testing his firewalls, and trying to gain access to his e-memories. Lindon was trying to figure out how much of a threat he was.

"alright CT, let's relax," said Lindon.

<ALERT: This is a trick. Attack imminent. Threat level: Low>

CT barely needed the heads-up, he'd had a gut feeling. As he'd predicted, a wave of malicious code suddenly flared up and hit CT's systems. He swatted the attack aside without missing a beat. Lindon's jaw went slack with shock. CT triggered a script he remembered coding as an angry 13 year-old called *mind_fuck*. An unstoppable battering ram of brute force code obliterated Lindon's firewall and seized hold of *everything*. And then it, along with all of Lindon's operating system, vanished.

Lindon collapsed to his knees, clutching his head. He looked up, eyes welling with tears,

"What have you done?! Where is my data...everything...where?"

"It's safe," replied CT, "you'll get it back in an hour. If you leave right now, that is." Lindon snarled with rage, and charged at CT,

"I'll kill you!" he shrieked.

With his system defences down, it was now child's play for CT, who promptly issued a series of commands to the *swimmers* located in Lindon's leg muscles. Lindon's left leg abruptly went numb and he sprawled on the floor once again.

"Leave," said CT.

Lindon slowly shook his head and mumbled, “OK, whatever you want,” he was massaging his leg in shock. CT issued a further string of commands, and restored feeling to the leg. Lindon gingerly got to his feet, shook his head, and limped from the garden.

The crowd was silent. No one whooped now. No one even looked over at CT. Slowly the group dispersed.

Sam came over to CT. He looked him up and down and silently messaged,

@Sam: @CT OK, maybe you were right.

His father was crying. CT wasn't sure why. Today the pain was bad. Today, CT had stopped being able to see out of his left eye.

“I know it hurts, Cahrak, I thought it would be worth it...I wanted you to have a chance to reach the top. But...maybe it's not meant to be,” said father, his head bowed. Father never talked like this. Never had doubts. It made him mad.

“Get the needle,” he replied.

CT jerked awake, his mind knotted and tense. His vision immediately swam with data.

<REMAIN CALM. You have been brought out of sleep to prevent the development of a severe nightmare>

His eyes moved, accessing menus.

<Time: 03:57>

<Biometrics: OK>

<Messages: 1>

Wiping cold sweat off the back of his neck, CT committed to letting the last echoes of the dream sink out of reach.

*@CT @branes: I don't think I'm going to be able to get back to sleep.
Options? Sort for productivity*

<Pref 1: Exercise (you are behind on your weekly quota, slacker)>

<Pref 2: swimmers emit tranquilizers>

<Pref 3: View available jobs>

CT took a deep breath and swung his legs over the side of the bed. With his movement, the lights slowly came up to a dim half-level.

A section of his floor lit up, and rotated to form a treadmill.

<Select speed>

He chose 400 meter sprints. They hurt the most, and he could get through the week's quota quickest with them. The treadmill within the floor segment whirred, and his stride lengthened. His vision automatically filled with tranquil park vistas. He angrily shut the program down, preferring to stare at the wall in front of him. The corner of his vision displayed distance, speed and pulse rate information, and ranked his performance against millions of others. He shut that down too, and began to run hard.

When he hit the twelfth sprint, his *branes* told him that he had completed his quota for the week. He continued anyway. His father's voice echoed in his mind unbidden, *machines can model pain, but they will never understand it*. His arms pumped, and he gulped air as the treadmill whirred. 400m seemed so far. He fought the urge to slow.

<Incoming URGENT call>

<Caller: Sam Jenkins>

Fuck. He deactivated the treadmill and collapsed panting on the bed. The last set had been near his limit, he could hear the blood pumping in his head. The digital display in the corner of his vision flashed the time at him: 04:28

@CT: @branes: *Am I going to be sick?*

<No you dummy. Exercise-induced nausea will pass within 60 seconds>

He answered the call from Sam. Immediately the room around him blurred and reformed into the Starbucks Environment. He was sitting at a table, Sam was opposite him. CT raised an eyebrow,

"It's the middle of the night, man."

"I know, I know, but look...I cracked it," Sam was smiling at him, excitement barely contained. Growing more alert, CT leaned in,

"Cracked what? What have you been up to?"

"I still can't believe it...OK, don't freak out but I'm going to run a quick security program to check we're not bugged."

"Uh oh."

Sam's avatar froze for a couple of seconds, and then reanimated abruptly.

"OK."

"I'm all ears",

"Well...I've cracked the Zone security encryption," said Sam. CT's eyes widened,

“When you say *the Zone security encryption*...you don’t actually mean that, right?” said CT.

“That’s exactly what I mean,” replied Sam.

“Bullshit.”

“No dude, this is legit,” Sam’s avatar made a throwing gesture, and cascades of code began descending across CT’s vision.

“Fuck, how long have you been working on this?” CT’s virtual brow furrowed in concentration as he called his best data sifting programs into action.

“Years man...it started out as just messing around. But, I got sucked into it.”

CT was looking at the reports from his sifters,

“My *branes* are throwing more security warnings than I think I’ve ever seen,” he grinned, “this is incredible...Holy shit. I can’t believe you kept this quiet. I thought you were looking at that E-Coli strain?”

Sam looked sheepish, “I’ve actually had that solution ready to push for quite a few months.” CT closed the Starbucks Environment and now his vision just showed the video feed to Sam’s face. He made sure he had Sam’s full attention,

“Sam, what the hell are you planning?” he asked. Sam held his gaze and said,

“Look, I was gonna show you this once I’d had more time to fix the bugs and make things more elegant...but I got contacted by Don King.”

CT ran a quick diagnostic to check he had heard correctly. Don King was a Zone A hacker who had been abducted by the Fundamentalists 5 years earlier. It was one of the most high profile cases of tech jacking in living memory.

“*The Don King?*” CT said,

“Yeah man, I thought it was bullshit, but he started telling me things which were pretty convincing, look.” Sam flicked him a series of video recordings showing interactions with the man claiming to be Don King. He certainly showed the skills of a Zone A hacker. “He wants me to meet him,” said Sam, “he said he’s been undercover in Zone C, and can’t risk blowing his cover. He found me through the security breach I’d engineered. I tried to press him for more details but he wouldn’t say anymore.”

“Zone C?”

“Yup.”

“You’re shitting me.”

“No joke. Look, CT, this sounds important. I’m going, and I want you to come with me.”

“Zone C is fucking dangerous, Sam.”

“CT, c’mon, you of all people must be curious about what it’s like there?”

“Of course man, but I’m also not looking to get stripped of my tech and sent to prison,” replied CT.

“That’s not what I asked,” said Sam.

“Yeah. Yeah, I want to know,” said CT, feeling the realisation deep within himself.”

“So help me.” Sam began, “If we do this right, we won’t get caught, you’re the best goddamn hacker I’ve ever seen. With careful planning, we’ll be fine.”

“We better get to work,” said CT.

The history of the zones was vaguely documented, with countless factions and corporations sponsoring different versions of the truth. What most agreed upon was that the tech divide, at first simply the gulf between rich and poor, had at some point widened to become an evolutionary divide. Advanced bodyware, requiring countless invasive operations, imbued its recipient with superior cognitive abilities. To a Zone B resident, a citizen from Zone A was a genius. To a Zone C resident, they were a god. Unsurprisingly, the change had not occurred without resentment. A bloody period of instability had prompted the creation of the zones, which served to protect those who possessed advanced bodyware from being kidnapped and tech-jacked.

CT and Sam had chosen the evening shuttle from the Stanford Zone A. As they left campus behind, their *branes* projected the scenarios they had rehearsed onto their vision, preparing them for almost any eventuality. The evening marked the culmination of weeks of preparation. Moving on foot, they impersonated Zone C workers returning home after completing a day’s work in Zone A. Although permits for Zone C residents to work in Zone A were stringently monitored, there were enough of them issued to make creating fake records in the system feasible. There were simply too many menial jobs to be done in Zone A to put a blanket ban on inter-zone travel.

Movement between zones occurred exclusively by mag-lev, and it was whilst entering and exiting the mag-lev station that CT and Sam would be subject to the scrutiny of the drones. Sam whipped CT a message:

@Sam @CT: That’s the mag-lev station up ahead, we’ll be scanned by the drones as we approach. You ready?

@CT @Sam: Ready.

CT felt his *swimmers* flood his bloodstream with caffeine and adrenalin. As the pair walked closer the station, their enhanced hearing picked up the barely audible whir of the drones.

They were spherical, metallic, and about the size of a soccer ball. Millions of them hovered high above the ground in black swarms, constantly scanning the area for human heat signatures. They could stop a lone chancer or a tank division. CT and Sam fell in with a larger group of Zone C workers who were also clearly heading towards the mag-lev station. A few drones swooped low above the group and projected holographic footage of previous illegal attempts to enter Zone A. In one projection, a frantic man attempted to shoot a drone. He was vaporized on the spot, leaving a red smear on the ground and nothing more. No one in the group looked at the projections.

CT and Sam had used Sam's zone encryption crack to create fake Zone C IDs, complete with retina records and complete background histories. They had modelled drone retina scans in their dorms, practiced the correct responses if queried. CT felt his *branes* override his natural impulse to tense his muscles, as that was exactly the sort of behaviour the drones would scan for. More drones swooped, tiny red flashes revealing that they were retina scanning everyone in the crowd. CT tried not to hold his breath. Nothing happened. The group trudged into the station unchallenged. CT let out a soft sigh of relief.

Soon afterwards, they were on the mag-lev, zipping across mountains and oceans faster than the speed of sound.

@Sam @CT: Next stop is us, Istanbul. One of the major Zone C hubs. Don King said he would meet us at a club here tonight. A place called Deafen.

CT nodded and checked he'd downloaded the Turkish library for his *branes*. Satisfied, he closed his eyes and slept.

"Get the needle," said CT.

"Are you sure, Cahrak?" replied his father. His younger self nodded once. The Medafocrine felt icy going up his arm, and it only took a few seconds for the pulsing in his ears to grow louder. His heart beat became audible. He wanted more air, could feel the sweat already beading on his forehead. The thumping grew louder still. His father was watching his vital signs with a worried frown.

Thump, Thump, THUMP

"CT!" yelled Sam. CT jerked awake, putting his hands over his ears, before abruptly becoming calm again, "wow, you're hard to wake up," grinned Sam, "come on, we're here. We need to be at the club in the next hour."

The club had a mandatory *brane* hook. It came at him like a wooden-handled skipping rope whipping towards his face. The hook was an extension of the club. It took over your *branes* as soon as you crossed the threshold. CT could have easily danced around the clumsy power grab, but he wanted an authentic experience. The illusion was projected onto the world around you. CT's vision pulsed with psychedelic colours and surreal hallucinations. He saw a dancefloor which seemed to be made of hot coals, with red-winged devils circling above it. The DJ glowed like a ghost, and the sound waves he created were visible, cast like white shadows in the gloom. The music *boomed* in his implants. Thumping and wordless, his *branes* told him he was listening to the remixed sounds of a cow freezing solid and then shattering played a thousand times a second. This zone was still at a level where it was considered impressive if you could afford to repair hearing damage. That was how the club got its name: *Deafen*. There was no hyperbole in the name. His *branes* flashed a warning displaying his hearing damage increasing...fast. Everyone in here was going to face a serious

medical bill in the morning. The club systems suppressed the flashing red warnings in his vision with the subtlety of an East China hooker.

Taking a deep breath, he logged into the club menu interface and ordered a drink. He reached out subconsciously, expecting to feel the cocktail ready...but his hand touched nothing. Sam's message expressed his own surprise *@Sam: @CT no service drones here*. CT waited for a human waitress. Waiting took him back to his childhood. Made him think of his father, ever the serious futurist, *every profession you see, CT, always ask yourself – can a machine do that?*

The people in here were the kings of Zone C. High-rollers. He cracked them. It always staggered him how poor they all were. A threat-detection algorithm he'd built parsed the lives of everyone in the club, as videoed by their primitive *branes*. It sought out every recorded instance of violence and confrontation, training for combat, and natural aggression, and analysed the outcomes. Effectively sifting the vast quantities of information *branes* recorded in a lifetime required skills and hardware only available to high level Zone B hackers or a Zone A citizen. CT was informed the results were ready and he hit *run*. Suddenly, everyone in the club had a neon-white number above their head. This was their threat ranking. His own number appeared in the top left corner: *1*. The white light above Sam showed *2*. No surprise there. Throwing a punch or drawing a weapon on someone with a two-zone jump on you was akin to a hamster attacking a bear.

@Sam: @CT: Just got an encrypted message from Don King, he said he'll be arriving in about 30 minutes. We may as well have a look around.

@CT: Sure, let me just check the place is safe.

@Sam: Ha, so I take it that means you're running your dick measuring app?

@CT: Yup.

@Sam: Am I number 2?

@CT: Indeed.

@Sam: Anyone interesting?

@CT: I'm checking out the top 5 now...

He'd homed in on number three. He suppressed a grin. Sometimes you didn't need technology to see the obvious. Most people from Zone A were about 6'6": the growth hormone releasing *swimmers* in their bloodstream ensured that no one grew up to be less than 6'2". But this guy made CT and Sam look short. He was hunched over the bar, ignoring everyone, seemingly oblivious to the pain of *Deafen*. His hand engulfed

a glass of what CT's *branes* interpreted as neat vodka. He had an actual ink tattoo that extended from his ear below his neck. It depicted a cobra eating a pig.

@Sam: I'm guessing that dude made it in?

@CT: No shit.

@Sam: Who else?

@CT: Hey this is pretty unusual man, number 4 is a chick.

@Sam: Really? Who?

CT pointed to a girl near the middle of the dancefloor. She was unremarkable. Mid-twenties. Somewhat attractive. She wore jeans and a simple tank top which changed colour every minute, very tame by Zone C club standards. Right now it was orange.

@Sam: Her?!

@CT: Yeah, in the orange...now red.

@Sam: Oh yeah...now I see it. She fits in too well. It's practiced. What's her deal?

@CT: She's an assassin. She has some cool shield protocols to hide her brane records from her kills. She held my whole algorithm up by over a second.

@Sam: Not bad for Zone C tech.

The girl's head suddenly snapped around and she stared at them both from across the room. Her glare cut through the flickering hallucinations and she regarded them both first coldly, then suddenly with alarm. With only the tiniest hint of a warning, an *avalanche* of malware hurtled at CT's systems. Enough to last a trillion, trillion lifetimes. He had to steady himself in the face of the onslaught, as this ugly weight threw itself at his defences. Concentrating furiously, he re-routed the garbage data that was frantically trying to bury itself in every subroutine. When he could risk taking some of his attention away from the manoeuvres, he looked back at the girl.

She was gone.

@CT: Sam, you OK?

@Sam: Ugh, just give me a sec I'm still sorting, where did she get all this?

@CT: That was nasty. Looks like we spooked her.

@Sam: Paranoid bitch. Gotta hand it to her though, that was pretty good. Oh man, it's like sand in your jock-strap.

@CT: Not a lot of finesse in that move, but it worked. Tell you what Sam, that guy in the pin-stripes owes us a drink.

@Sam: Oh yeah?

CT gestured to an obvious Zone C high-roller. Wide pin stripes, lots of girls with outfits that flashed and sparkled faster than the club lights. And paying in cash to complete his retro look.

@Sam: How come?

@CT: We just saved his life.

@Sam: CT this is surreal. Maybe I'll meet the girl of my dreams instead of Don King. I'm going to run something I've been working on.

@CT: Is this the algorithm which scans for desperation, insecurity and recent breakups?

@Sam: Don't pretend you haven't got one too.

CT smiled. Tonight he was going to let his real brain decide who to talk to. Out of the corner of his eye he saw Sam get talking to a cute redhead near the back of the club. She gave him a big smile as he started talking, and right away began nodding enthusiastically. Sam was a talented hacker. He kept a tiny GPS marker for Sam in the corner of his vision, just in case he needed to find him quickly.

A waitress wearing a skintight white dress brought him his drink. The club query flashed across his vision *@Deafen: confirm purchase 1 Old Fashioned: \$200?* His eye movements accepted the transaction.

"Looks like your friend ditched you," the waitress remarked dryly. Out of habit he parsed her data, and her information began to cross his vision: *Name: Vanessa, Age: 24, Zone: C (Resident), Occupation: ...* He shutdown the feed, and pinged her:

@CT: @Vanessa: I'm pleased he's having fun.

Her eyes widened slightly. He noticed her fingers moving, and her eyes narrowing in mild concentration. After about 3 seconds:

@Vanessa @CT: How did you message me so fast?

@CT: *I'm energetic.*

Now she was really staring at him, the other drinks she was holding forgotten. He realised that the delay between her messages was because she was *typing*.

@Vanessa: *Do you have eye-track typing?!*

“Where did you get that?” she switched back to speech. She sat down next to him, “Go on, flick something again.” She deliberately watched his fingers to see if they moved. His *branes* were running simulations of likely responses to different comments he could make, populating his vision with scenarios. He knew that if he spoke to her outloud, it would frustrate her and increase her curiosity, he knew that if he messaged her again and asked her to come home with him, based on her *brane* e-memories there was a 93% chance she would. He suddenly felt a wave of sadness wash over him. This was why no one ever moved up a Zone. He had the jump on everyone here. He made a show of wagging his fingers, pretending to type and delaying his response.

@CT: *Thanks for the drink*

He walked outside to smoke nicotine his *swimmers* would absorb.

It was cold outside. He looked up and could see tiny orbs in the sky, out of place next to the stars. CT found himself feeling pensive. The night air whipped at his face and he felt his earlier stab of melancholy starting to ripple throughout his body. He was uneasy about all of this. He trusted Sam’s judgement, but Don King had been presumed dead for five years. When the Fundamentalists tech-jacked you, they killed you too.

“You know, man, the US government beams most of that energy to fuckin’ West China...” CT glanced over to see a guy hanging over the balcony rail next to him, his face suddenly unnecessarily close. Undeterred by CT’s obvious disinterest, he continued, “That’s why the monthly subscriptions cost so damn much! If they beamed even half the energy they beam to those yellow sonsofbitches, it’d be cheap as a cup of coffee.” The guy’s neon white number flashed: 487. CT ran a cursory parse of his *swimmers* and detected high alcohol blood content. Back home, that could only be because a guy had manually turned off the toxin processing function of his *swimmers*. Glancing at this guy’s bank balance, CT realized with a start that it was possible this odd-smelling character couldn’t afford the tech. The guy gazed into the middle distance, seemed to reach some kind of deep inner peace for a brief moment, then aggressively rounded on CT again, “And I’m telling you, no one gives a shit! Those fuckers in A and B. They don’t give a shit! All those guys have got more money than they know what to do with. You know how much a 3 bedroom house costs in A?” He paused for dramatic effect, “250 million dollars. Can you fuckin’ imagine?”

@CT: That's a lot of money.

The guy wrinkled up his nose like he'd just smelled something bad, "hey don't be getting in my head like that. Why can't you just fuckin' talk?"

CT looked at the guy for a long moment, holding the eye contact. His *branes* analysed the pupil dilation on the guy, factoring in tens of thousands of environmental factors. He calculated an 83% chance the guy would back down. CT held the eye contact, silent. The guy wrinkled up his nose again, a mumbled,

"whatever man", and shambled back towards the club. Just as he looked like he was gone, he turned back and mumbled, "And they're gonna make you pay for calling off their girl. Bad move."

He began laughing to himself and lurched off. CT's subroutines flashed a message into his vision

<alert, 'calling off their girl' implied threat>.

CT's head whipped up, and he felt the hairs on the back of his neck stiffen. That comment didn't sound like a coincidence. He wasn't taking any chances, and began to run a full diagnostic on the area. He didn't have to. Very quickly, his own ranking number in his display started dropping. It flashed 2...3...4 and kept going.

That shouldn't be possible.

@CT: @Sam, who just arrived? We need to get the fuck out of here!

<Send Fail>

CT was suddenly afraid. He switched to infrared vision, took a deep breath, and began deploying all his most insidious bits of survival code. The result was instantaneous. The club lights went into supernova, the music hit a frequency which shattered glass, anyone rich enough to have *swimmers* began to hallucinate in a way that caused them to pass out on the spot. All comms violently scrambled. Hundreds of screams rang out and the air began to stink of panic.

His sweeps began returning warning messages he hadn't seen since he was 15:

<WARNING – CRITICAL OPPONENT MISMATCH – RUN!>

Ohfuckohfuck. He saw the flashed reports of his *swimmers* releasing extra adrenalin into his bloodstream. But he couldn't identify the threat...wait! He barely had time to react as a non-descript guy suddenly emerged from the panic and calmly raised his arm to fire. CT wasn't sure what it was, but luckily his systems knew and told him in no uncertain terms: <DUCK NOW> He ducked in time to see an ugly pulse of electricity zap past where his head had just been. As his consciousness began to catch up with the messages that were sprinting past his retina he was given his best option: <JUMP OVER THE BALCONY NOW> he didn't have time to ask for his survival

chances, he just had to trust his systems. He sprinted towards the edge of the terrace and hurled himself over the balcony.

The water in the river was freezing. Even with the adrenalin coursing through his veins, he worried he would seize up. His systems told him to stop being a pussy. He swam downstream and within a minute, the club was growing distant.

@CT: @Branes: *Have they got a lock on my GPS signal?*

<Negative. 29 trillion brute force attacks have been halted and quarantined>

@CT: *Delete the quarantined trackers immediately!*

Even as he typed it, he knew it was ridiculous.

<Dude, no can do. Threat is embedded, obvi. >

That was worrying. He would need to get to a sophisticated terminal to see what was lurking in his systems.

@CT: *Identify pursuers?*

<Identities unknown. Zone A training 99.997% probable>

No shit. @CT: *Are they law enforcement? Should I cooperate?*

<Don't be an idiot, they just tried to kill you>

@CT: *Alright dickhead.*

Thankfully, it started to rain, so CT's soaked-through appearance didn't raise too many eyebrows. People just assumed he was homeless and couldn't afford simple rain repellent.

With the trackers embedded in his systems, CT couldn't risk using his *branes'* more advanced functions – it would be too easy to pick him out as a Zone Aer. There was no way he could remove the quarantined threat without giving himself away, so he would need help. He had to find someone who could get him advanced hardware. CT carefully put up an advert offering to sell an algorithm that was sufficiently advanced so as to be very attractive to a Zone C hacker, but not so advanced as to be suspicious. Within minutes he had a dozen potential buyers. He messaged the closest.

@CT @Rex: *Can you pick me up from the canal? I can't send you my location details – but you'll see me by the McDonalds on the corner of South Street.*

@Rex: *Sure no problem.*

CT groaned. Maybe he hadn't made his algorithm complex enough...the guy hadn't even questioned this bizarre in-person transaction. Then he remembered that it was OK, and that in Zone C a lot of things were still done face-to-face. This would take some getting used to.

Shivering, he walked into McDonalds to wait. Being careful not to use any advanced algorithms, he cracked the place's security cameras so that when they zoomed in on him it wouldn't register.

"Can I help you, Sir?" He quickly shutdown the code screens and security interfaces that were currently occupying most of his vision. The woman behind the counter was looking at him with a slightly concerned look. "Are you OK, sir?"

<She has interpreted your *brane* viewing middle-distance gaze as potential insanity and is concerned you may inconvenience her. Suggest: 'Sorry, was lost in my own little world' + smile >

CT put on his best smile, "Sorry, I was lost in my own little world."

She looked visibly relieved and continued, "Yeah, it's late. What can I get for you?"

With a surge of horror, CT realised that this woman wasn't the proprietor. There simply were no drones in this place. The banality of her job staggered him into momentary silence. @CT @Branes: *Suggested non-suspicious order?*

<McTortilla and Coke>

"Um, I'll have a McTortilla and Coke please."

"Sure. How would you like to pay?"

"Erm..."

@CT: *Well?*

<Sigh. Retinal deduction>

"I'll swipe."

"Sure."

<Stop being such a jackass>

After drying himself off as best he could in the bathroom, CT felt more childhood memories come back to him. It had been at least 15 years since McDonalds went out of business in Zone A. Coke didn't taste how he remembered it either. People gave him a wide berth. He was still sufficiently damp as to be a very strange sight. It was 2AM. He couldn't help but notice that the conversations were different here. Everywhere he looked he could see people wagging their fingers, or typing on their tables. He could hear the murmur of conversation. He even saw one guy pull out a goddamn hold-in-your-hand *phone*. CT and Sam had done their research preparing for their Zone C journey, but it was even more surreal than he expected, like going

back in time. As soon as he thought about Sam, he felt his *swimmers* release a horrific hormone concoction which nearly made him simultaneously faint and orgasm on the spot. He tried to fight his survival programs, but they obviously didn't want him to think about Sam, and they were hard to resist. That must mean it was bad. He stopped fighting, and Sam was gone from his mind.

A car pulled up outside, and CT recognized the passenger from the advert. It was his guy. He got up and walked outside to the street. For Zone C, this car was pretty slick. The shell was fully digital, and right now was displaying a 3D video of some Zone C girls dancing in bikinis. This was definitely the kind of guy CT needed. CT pinged the car and the backdoor opened. He got in.

His guy turned around and gave him a grin,

"I'm Rex,"

"CT,"

"Let's get you out of here, pal."

With that, Rex spun around and shot him in the neck with what CT realised too late was a sedative. As his vision began to blur, CT was dimly aware of Rex putting the car into gear and beginning to drive. CT's last thought was that he couldn't remember the last time he'd seen a person actually drive a car before.

"Jesus CT, you're marked," Rex was staring at his laptop, "like, seriously, your specs are all over the net. The boss wanted you bad." He looked over at CT, who sat slumped in the corner, "How you holding up?"

CT was awake, and had to resist the urge to run a full range of bodyware scans. Too risky.

"You're making a mistake here, Rex." Said CT, his voice emotionless.

"Why's that, pal," replied Rex. It wasn't really a question.

CT paused, not wanting to give any more information, so Rex jumped in,

"oh man, I thought you were going to give me some righteous speech about how you were this and that Zone A big shot. No need, the boss told us to expect you."

Panic hit CT, and threw caution into the wind and tried to boot his systems. Too late he realised they had been disabled while he was unconscious. Trying to stand, he realised that his hands and feet were bound. His breathing quickened.

"It's like a drug, I bet." continued Rex, ignoring CT's efforts to stand, "Am I right? I mean, what does it feel like...having, like, multi-op, Zone-fucking-A *branes*?" CT was trying to think of a way out and didn't respond. Rex resumed his monologue, "I remember one guy at the university over in Chongqing. He had some *branes*...real low level stuff by your standards but my god, he could code like I never seen. He had a connect in zone B. If you know the right people and are ready to pay then it can work," Rex paused, "this guy though, he was too loud about it. Police got on to him." Rex shook his head. The sound of a distant door opening echoed into the room, and Rex cocked his head,

"That'll be the boss", he said.

Footsteps grew louder. CT found himself wishing for a wisecrack from his *branes*. But his mind was sluggish and silent.

A man entered the room, and CT gave a start of recognition. It was the same man he had seen at *Deafen*, the one who had caused him to jump the balcony.

“Ah, CT, I’m sorry we have to meet under these circumstances,” he began, adjusting a panel of buttons at his collar, “I’m a great admirer of your work.” The air around his head seemed to shimmer, and then his whole face abruptly changed to look like the Don King CT had seen in all his files.

“Cool disguise, boss,” said Rex.

“Rex, you’ve done well,” said Don King. Rex licked his lips and seemed to summon his courage before saying,

“So, my family? We agreed you would release them when I brought you CT”.

“Oh Rex, bad news. It appears they came down with a modified Ebola virus – not even CT here has published a vaccine to that one.

“What?” Rex’s face had gone white.

“Yes, and what’s worse, this particular strain is very contagious. Perhaps during your grief, you came into contact with it,” continued Don King.

“What the fuck are you doing to my systems? Get out!” Rex shrieked, suddenly gasping for air. He abruptly clutched his abdomen and fell to the ground.

“But we should be thankful for small mercies,” mused King, gazing into the middle distance, “after all, this strain kills in seconds, not days.” Blood began to trickle from Rex’s eyes, nose and mouth. He writhed on the floor making incoherent noises. After what seemed an age, he was still.

King seemed to snap out of a daze and looked at CT,

“That patch you released for modified smallpox last year, I have to say, was truly remarkable work,” he said. CT gave him a level look and said,

“What have you done with Sam?” He felt relieved that his voice was steady.

“Ah yes, your friend,” replied King, “he performed his part exactly as we had hoped. It was a challenging project you know, convincing him that he had come up with his crack to the zone security system all on his own. He put up quite a fight too.” CT felt a lurch of dread in his stomach and forced himself to meet King’s eyes and said,

“You won’t get away with this.” King held the gaze, and replied,

“Yes. Yes I will. A lot of very important people agree that my work is crucial for Zone A security.”

“What the fuck are you talking about!” CT yelled.

“I forget we’ve deactivated your systems, you can’t connect the dots,” replied King, “well, it’s not that complicated, you should be able to follow even in your pathetic current state. Fear and balance. That’s what it’s about. For Zone A to thrive, it needs to be kept pure. That means keeping people afraid, so that we can continue to enforce the divide between zones. That means periodic tech-jackings.” King paused, seemingly pleased with something. CT tried to think, and said,

“Why does it mean so much to you?”

“We’re on the path to becoming gods,” began King, smiling strangely, “we can’t allow objections to biological experimentation to get in our way. And make no mistake, there are objections. That’s where fear comes in. Sometimes a little terror is required to help people overcome...ethical inflexibilities. You of all people must see that,” King stroked CT’s cheek affectionately and said, “CT, I want you to know, it’s not personal.” A needle had suddenly appeared in his hand.

“What are you going to do to me?” This time CT’s couldn’t keep his voice steady. He didn’t hear the response, he was only aware of a pinprick, and then his mind was awash with darkness once again.

Strange. That was the first thought that had enough substance for him to latch onto. Another thought replaced it: *Wrong.* CT slowly sat up in the bed, finding the movement exhausting. A wave of nausea gripped him. Habit took over and he instructed his *swimmers* to release a tight burst of adrenalin, plus a few endorphins. Nothing happened. He tried opening his eyes, and felt stabbing pain. It was the kind of pain he was used to feeling after a jump...post-op.

He felt a sudden all-consuming terror.

He fought through the pain and a little light escaped into his vision. Only one eye seemed to work, something he hadn’t experienced since he was ten years old. He tried issuing commands to his *branes*. Nothing. His vision remained one-sided. And blurry. On unsteady legs, he shuffled over to the wall where there was a mirror. His reflection greeted him. Fresh stitches were still visible around his eyes, ears and at his temples. He tried once again to call up his *brane* display. Tears began to well in his eyes as he received no response. The pain tripled.

They’d stolen all his bodyware. Decades of operations. Millions of dollars. His childhood.

Gone.

Dizzy, he shambled out of the room, and emerged onto a fire-escape. It was night. In the alley below, CT could dimly make out tiny, blurry movements. His mind moved so slowly. He finally understood that the tiny shapes were rats. It took him a moment to remember why he wasn’t seeing a report on the number of rats, their threat level, and his next options. He vomited over the steel railing. He became aware of a whirring sound. A Zone C security drone was drawing closer. It hovered above him, shining a bright white light down which caused CT to shield his eyes.

“Identify yourself,” came a Robotic voice. Out of habit, CT waited for smart responses to the situation to be presented to him. Usually it would be trivial to outsmart this drone. But his mind was blank. The drone emitted a dull whining sound, and CT eventually realized it was the drone’s tazor powering up.

“I...I’ve been robbed,” said CT.

“Retinal scan inconclusive. You are not a Zone C resident.”

“I’m a Zone A citizen,” replied CT.

“Insufficient bodyware. False assertion,” boomed the drone.

CT wracked his brain for answers, he had none.

“My bodyware has been stolen,” he said.

“Logical fallacy detected. If bodyware has been stolen, you are no longer a Zone A citizen,” replied the drone.

“It doesn’t wo—”

“Initiating arrest,” interrupted the drone, and CT felt his whole body shake as the tazor’s electricity coursed through his veins, causing him to spasm so hard he nearly broke bones. He heard the metallic scrape of the drone’s pincer being deployed and felt it clamp around his body with suffocating force. Within moments he was lifted up into the night. Zone C fell away behind them, as they began flying 5,000 feet in the air.

“where are you taking me?” groaned CT.

“silence or you will be dropped,” replied the drone.

CT’s mouth clamped shut with an audible click.

One hour later, the drone carried out its threat, though by that point they were hovering only 20 feet in the air. CT miraculously didn’t break any bones in the fall, but he would be bruised for days. He expected the drone had been programmed to know that. The dust had barely settled before people surrounded him. Lying in the fetal position, he looked up. And gasped. They were so ugly. So short. It shocked him to see such imperfections.

One of the men was speaking to him, and he realized with a start that he couldn’t understand the language being spoken. When you had *branes* then you spoke all languages.

“English?” CT said,

The man spat and said in broken English, “No Chinese? Very hard round here my friend.”

“Where am I?” CT asked.

“New Tokyo,” replied the man,

“You mean...Zone E?” said CT, eyes bulging slightly.

The man gave a harsh laugh, and the circle drew closer. CT finally realized that these men had not come to welcome him. He felt more stupid than he ever had been.

Because he was.

He was dimly aware of a boot stamping on his human face. He wondered if it would last forever.