



TOMORROW **PROJECT ANTHOLOGY**

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DARK FUTURES

THE FUTURE
Powered by Fiction

Dark Futures

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Introduction

Ed Finn

The title of this collection, *Dark Futures*, acknowledges one of the most important roles that science fiction can play: warning us of the pitfalls and hazards ahead. The future is full of uncertainty and risk, but it takes a good story to push us from apathy to action. Novels like Margaret Atwood's *Oryx and Crake* and Neal Stephenson's *Snow Crash* are powerful because they create yardsticks for human progress and social justice, showing us just how close we are straying to the danger zones of political and cultural tyranny.

For this volume of the Tomorrow Project's *The Future: Powered by Fiction*, we have selected some of the best dystopian stories submitted over the course of our global writing competition. Dystopia comes to us from the same Greek roots as utopia, and it means a "bad place"—a world where individuals suffer and society as a whole is much worse than the way we live now. The funny thing about dystopia and utopia is how much they have in common. Both are stories about worlds where all of the big questions have been answered—either fearfully, like in George Orwell's *1984*, or hopefully, like the classic *Utopia* of Thomas More. But anyone who reads More's *Utopia* knows that one man's vision of a perfect world might be someone else's nightmare. Any future where all of the questions have been answered takes away one of humanity's most fundamental resources: hope.

Most of us do not have to live in someone else's idea of a utopia/dystopia, but spare a thought for those who do, like the citizens of North Korea. The rest of us live in a world where many of the essential questions remain unanswered: what

is a good life? What is justice? How can we thrive collectively and individually? But even for those of us living in the land of questions, debate, experimentation, and deliberation, utopias and dystopias are around every corner—we visit them all the time. Advertisements present thirty-second visions of perfect futures filled with beautiful people using beautiful things. Political speeches offer sweeping narratives of a better tomorrow, or sometimes a terrifying tale of coming collapse. And of course there is science fiction, in all its forms: videogames, movies, novels, and comic books, to name a few.

The stories in this collection are dystopian, but they still offer a sense of hope. Like all fiction about the future, they are also stories about the present, about the choices we make today as we try to answer society's grand challenges and ethical quandaries.

- In Andrew Crawford's "HEAVEN," a neurologically-embedded system, the Heightened Environmental Awareness and Visualization by Electronic Network (HEAVEN), replaces the harsh and unpleasant features of the real world with soothing and pleasant sounds, images, and direct brain-to-brain interactions.
- In Joseph Hirshorn's "The Metamorphosis," a dehumanized industrial labor force is evaluated and tracked from an early age into specific careers, and tightly segregated by occupation during adulthood. Two workers from different groups gradually fall in love, but struggle to be together for more than a few seconds each day on the train.
- In Fallon Leyba's "Troubleshooting," IT trainee Coral Jones uses The Bond, a synthesis of human consciousness and electronic wiring, to pass her final college exam on repairing advanced computer systems. While Coral

is bonded with the machine, even the smallest mistake could trap her permanently in its source code.

- In Clancy Flynn’s “Intelligence Testing,” neural prosthetics have been developed for “Brain Babies” whose cognitive abilities are enhanced throughout the earliest stages of development. High school students scramble to catch up by using personalized cocktails of drugs, hoping to qualify for funding for neural prosthetic technology during college—but their parents do not always agree that cognitive enhancement is the right choice.
- In Pavel Chvykov’s “The Ocean,” humans discover and explore “the ether,” a mystical force undergirding the visible universe. A scientist tries to use the ether to leave his dying body and transfer his consciousness into the body of a young boy in a persistent vegetative state.
- In Ben Hylak’s “Unpredictable,” a middle manager at a gargantuan technology conglomerate tries to reclaim his independence and autonomy from “Ana,” a digital personal assistant that meticulously manages every aspect of his life.
- In Jacob Brefka’s “A Shorter Story,” the military deploys The Device, which digests human consciousness to create a ruthless war machine. The Device’s original inventor sacrifices himself to create a counterpart machine that incorporates human compassion and emotion, in hopes of stopping the megalomaniacal Device.
- In Becky Mandelbaum’s “Screens,” a college student’s roommate dies after a multi-day marathon session playing the immersive online game *Other Life*. His new roommate, a young woman, is also in the thrall of immersive digital experiences.

- In Clayton Cone's "Involution," a scientist who lost his family in a catastrophic highway accident as a child attempts to cryogenically regenerate the young motorcyclist who caused the crash.
- In Valerie Narumi's "The Hippocampus Dream Machine," a girl tries to understand what happened to her intellectually overachieving friend Ivy, who has sustained major neurological damage after a punishing regimen of brain training and ultrasonic brain stimulation during sleep.
- In Philip Arcuni's "La Vida es Sueño," Earth is faced with impending destruction because of a supernova. The Program, a sophisticated artificial intelligence, helps families decide whether to join the human diaspora searching for other habitable systems in the universe, or to stay on Earth and die, but be placed into a simulation that uses the vast energy generated by the supernova to generate an artificial experience of thousands of consecutive happy lifetimes.

Collectively these stories are dark visions that still offer some rays of hope, by warning us about what might lie ahead. They both encourage and challenge us to think deeply about the future, and we hope you accept that invitation. Join us online at www.tomorrow-projects.com to continue the conversation about the futures we should strive for and those we must avoid.

Ed Finn is the director of the Center for Science and the Imagination and an assistant professor in the School of Arts, Media and Engineering and the Department of English at Arizona State University. He is the co-editor of Hieroglyph: Stories and Visions for a Better Future, an anthology of ambitious,

hopeful science fiction, set in the near future and grounded in real science and technology.

Don't Diss Dystopias

Ramez Naam

This article was originally published on Slate's Future Tense channel on September 29, 2014.

Sci-fi writer Neal Stephenson is worried about America. “We have lost our ability to get things done,” he wrote in 2011, in a piece for the World Policy Institute. “We’re suffering from a kind of ‘innovation starvation.’” And part of the problem, he wrote, is science fiction. Where science fiction authors once dreamt of epic steps forward for humanity, now, “the techno-optimism of the Golden Age of SF has given way to fiction written in a generally darker, more skeptical and ambiguous tone.”

Others have picked up where Stephenson left off. In an op-ed for *Wired* titled “Stop Writing Dystopian Sci-Fi—It’s Making Us All Fear Technology,” Michael Solana wrote, “Mankind is now destroyed with clockwork regularity.... We have plague and we have zombies and we have zombie plague.”

Well, Stephenson wants to do something about that. He’s urged science-fiction writers to help reignite innovation in science, technology, and how they’re used, and his mission helped create *Hieroglyph*, a new anthology of optimistic, aspirational science-fiction stories. The collection includes stories from Stephenson himself and some of the best science fiction writers in the business, several of whom also happen to be my friends. The thesis behind *Hieroglyph*, that

one of the roles of science fiction is to dream bigger, to help us imagine positive outcomes for society, is one that I fundamentally agree with.

But in our enthusiasm for aspirational science fiction, let's not be so quick to dismiss the importance of dystopias.

Right now, the landscape of dystopias may be dominated by zombie tales and young adult novels with teen protagonists facing barely plausible totalitarian regimes. Yet there's a deeper tradition in science fiction of warning tales that have influenced our society—in positive ways—just as much as aspirational stories have.

Who doesn't know the broad outlines of George Orwell's *1984*? Whether or not you've read the book, whether you've seen either of the film adaptations of the book, you know that it deals with state surveillance and state control of the media.

Orwell wasn't right about where society was in 1984. We haven't turned into that sort of surveillance society. But that may be, at least in small part, because of his book. The notion that ubiquitous surveillance and state manipulation of the media is evil is deeply engrained in us. And certainly, the geeks who make up the bulk of the computer and Web industry have largely absorbed that meme, and that's part of the reason they tend to angrily push back on things like NSA surveillance when it's uncovered.

1984 may be an example of a self-defeating prophecy. It was David Brin, one of the *Hieroglyph* authors, who first introduced me to the idea that a sufficiently powerful dystopia may influence society strongly enough to head off (or at least help head off) the world that it depicts. That alone is a compelling reason for society to create smart dystopias.

Other important dystopias are scattered throughout science fiction's past and its present.

Brave New World dealt with a kind of proto-genetic engineering of the unborn, though really, as many dystopias do, it dealt with totalitarianism. The 1997 film *Gattaca* updated *Brave New World*, bringing us to a future where genetic testing determined your job, your wealth, your status in life. And here I have a confession to make. I absolutely hated *Gattaca*. I left the theater shaking my head because the science in the film was just terrible. No genetic test will ever tell you how many heartbeats you have left. No genetic test will ever be more accurate in telling an employer how well you'll do at a job than your performance at a past job would be. The film was a gross exaggeration.

Why do I bring *Gattaca* up, then? Because it was effective. Genetic discrimination on the scale and pervasiveness that *Gattaca* depicted may have been an exaggeration, but there was a real risk that employers might discriminate against the unlucky carriers of particular genes, and the very high likelihood that insurance companies would raise rates or drop coverage for people who carried certain disease genes. But in 2008, heading off a *Gattaca*-esque future, Congress passed GINA, the Genetic Information Nondiscrimination Act, which makes it illegal for employers or health insurers to base their decisions on your genes. And *Gattaca*, a film seen by millions, if not tens of millions, helped lay the groundwork for GINA.

Dystopian fiction has also helped us pass down important mores about the freedoms we find central, and helped rally people against injustice.

Fahrenheit 451 dealt with the fear of state censorship. That may seem quaint now, but consider its historical context: Written in an era of McCarthyism, the

House Un-American Activities Committee, and blacklisting of anyone believed to have Communist sympathies, Ray Bradbury's incendiary dystopia wasn't really about the future—it was about the present he lived in. (And, ironically, *Fahrenheit 451* has been censored or banned on at least three different occasions inside the United States since it was published.)

What of our present? We have our own share of warning tales, and for my money, they're among the most important pieces of science fiction being written. Pick up Cory Doctorow's *Little Brother* and *Homeland* and you find a warning tale, not of the far future, but of the barely-future, a warning about state surveillance, about overreach in the name of the War on Terror, about the abrogation of civil liberties, about the loss of privacy.

Or read Paolo Bacigalupi's Hugo- and Nebula-Award-winning *The Windup Girl*, a warning about climate change, the end of fossil fuels, corporate control of food, and corporate control of people.

These are powerful books, with powerful messages, about futures we want to avoid, some near, and some far. These are books I expect to stand the test of time. More than that: We *need* these books. We need people being shaken out of complacency on real threats to society, just as much as we need them being inspired by compelling new possibilities for society. (Cory Doctorow, by the way, is another writer with a story in *Hieroglyph*, demonstrating that the very same writers can pen both warning tales and optimistic stories. Indeed, many warning tales, including Doctorow's, can also be inspirational and optimistic in the ways in which characters persevere or overcome.)

I'm an optimist. My own fiction, while it has its own dark warnings about pitfalls ahead, depicts the potential of science to improve society by networking human

minds. More broadly, when I look at the world around us, I see that we've made it tremendously better over the ages, perhaps two steps forward, one step back, but better nonetheless. I expect the future to be brighter, not darker.

Yet if that's to happen, it will happen both because we have pole stars to aim for—the aspirational science fiction dreams that Neal Stephenson wants to bring more of into the world, and for which I applaud him—and because we have compelling warning tales that inform us of the pitfalls we need to avoid.

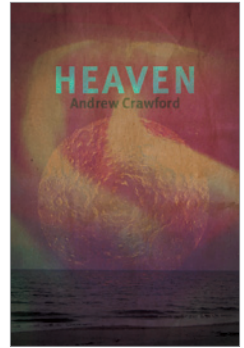
So by all means, pick up a copy of *Hieroglyph*. I have, and I'm loving it so far. And at the same time, let's keep those smart, thoughtful, prescient dystopias coming as well. The world needs both sides of that coin.



Ramez Naam is the author of the award-winning science fiction thrillers Nexus and Crux, and the non-fiction books The Infinite Resource and More Than Human. He lectures on energy, environment, and innovation at Singularity University, and was the founder and CEO of Apex NanoTechnologies, the world's first company devoted entirely to software tools to accelerate molecular design.

HEAVEN

Andrew Crawford



I. Heaven

“Welcome, Thomas. HEAVEN has accepted you. You are joining the millions of others who have come before you in the Transition. Your new life begins now.”

Light flashed. Bold capitals faded onto the white field, leaving their golden stain: HEAVEN. The letters glided into a vertical line to the left. Synchronized with a woman’s voice in a soothing southern drawl, words joined the letters.

“The Heightened Environmental Awareness and Visualization by Electronic Network. HEAVEN brings new life to the dead world around you. Now, the world’s knowledge and technology are simply a thought away. Explore your neighborhood with a fresh look; let your wildest dreams become reality. Electronic Network’s state-of-the-art imaging system connects your mind with those of people across the world. You can share ideas, thoughts, or even emotions in an instant. Never before has the world been so connected. Electronic Network: Building the Future for the Future.”

The thin letters EN spun in time with the woman’s voice, slicing through the nothingness behind them. The logo slowed before disappearing with the voice into a white background. Tiny pinpricks of light glimmered around the screen, sparkling like the snow that fell yesterday. *But without the blinding reflection from the sun*, Thomas thought. He enjoyed the warmth that emanated around

him—no, it was more like it enveloped him. The more he considered his snow-like vision, the less real it felt. *More like bleached sand*, he decided. Yet even that was not completely true. Where was the texture? The scent? The ocean?

The white turned black. His thoughts of snow and sand fell away in the darkness.

“Open your eyes, Thomas,” the voice said. Same tone. Same volume. Same accent.

Blurry tiles crossed overhead, overlapping two and three times, forming a maze of crossing lines racing into the obscure corners of the room.

“Good. Now blink. Can you move your fingers? Thomas? Can you hear me, Thomas?”

Where is that voice coming from? He turned his head to the left. Pricks of pain shot down his neck.

“Please take this slowly. You have not fully recovered from the Transition.”

He thrust his head right. Shafts of pain jammed into his head at the motion. Ignoring the throbbing, he focused on movement in the distance. A screen flashed thousands of threads of light, glowing and pulsing, weaving and tangling across the wall. A woman touched various threads to magnify them and examine the beads of light that shot through them. Green then gold then red, all barely discernable.

She turned toward him.

“Stop moving, before you sustain permanent damage to your cranial nerves,” the voice demanded. “HEAVEN is still calibrating.” The woman turned back to the screen, focusing on a thick tangle of lights.

Her lips had not moved, yet there was no one else in the room. And the voice sounded like it came from inside his head. The thudding of his neck interrupted the flow of thoughts; facing upright again minimized each blow.

“You are correct; I am the one talking,” she read his mind. “The newest version of HEAVEN comes with thought projection technology. Amazing, is it not?” She turned toward him again. “HEAVEN can be disorienting at first, but you will soon acclimate to the lack of direct connection. Now relax, and Synchronization will continue.”

Thomas sucked in a breath. *All in good time.*

II. Purgatory

She turned on HEAVEN.

The real thing, not one of those little telepathic games the woman made him play to make him think that he was using it. The experience was horrifying. Sights blinded him; sounds deafened him; emotions crippled him. The sheer force of the knowledge HEAVEN was cramming into his brain paralyzed Thomas. Each thought was an enemy thrusting its way through his mind to take control. No thoughts could be spared from the defense. Soundless voices shouted questions over one another in his head. Houses and cars and animals materialized in front of his eyes. He could not comprehend any of it: a new wave of information split apart his mind before he could pick up the shattering pieces. For the first time, he felt utterly helpless.

That was the point of the first exercise: to shock you into submission. HEAVEN could and would cripple you if you overextended yourself. It also scared Thomas

into clinging to every word of instruction the woman gave the next day, which was his attempt to reconcile himself before the terrorizing power implanted into his head.

He was free. It had taken them two weeks to release him from his cage. Every morning, Thomas had awoken to the woman in her short white skirt and cropped top carrying a tray with a tablet and glass of water: his only meal. Supposedly, it contained all the nutrients he needed. Thomas doubted it. At least until he learned that he could turn off his hunger: he soon forgot about eating real food. Either that or he stopped caring.

After the meal, the woman would give him telepathic commands, then would manipulate his body in some kind of a therapeutic yoga that contorted his limbs into impossible poses, and finally would volley him with an endless stream of instructions and cues he had to memorize in order to live a full life “under HEAVEN.” She promised there would be a test.

Now that the preliminary instruction was over, Thomas was allowed the freedom to wander the facility’s maze of intersecting halls. White masks and white coats covered every technician; white walls and white linoleum coated every surface. The few windows in the complex revealed an inner courtyard. Shadows smothered the square plot all day, except when the sun was directly above at the Hour of Relaxation. No one ever went outside during Relaxation.

Before long, Thomas had made the acquaintance of the others on his floor. Most of them were as clueless as he was about what was buzzing in their heads, but any company was welcome over that of the mysterious woman. One veteran of HEAVEN, a large, meaty man, called her The Saint:

“On account of she’s a saint compared to all them devils out there. Ain’t nobody human anymore. Sharing everything all day dried up them’s souls. Just watch The Saint so she don’t get yours, too.”

The next day, he was gone and forgotten, a seventeen-year-old girl taking his place. In the fast-paced world of flying thoughts and constant distractions, what did a crazy old man matter anyway? The outside was the promised paradise. Besides, it seemed like in here, everyone was crazy. Especially the new girl, Clair. She judged everything: that bookshelf projection is too hollow; your thoughts are too loud; you take too long to research. Thomas had to wonder if Electronic Network had hired her specifically to watch him and mark his progress.

Thomas soon discovered everything was connected with everything. Electronic Network had promised a universal grid of information, and they certainly had fulfilled their promise. Anything he needed, he could produce in his head with a string of key identification words. What type of tree is that? *Data: identify—species*. A tag with name, classification, size, and any other relevant information would pop up—along with that of everything else in the vicinity, if he wanted.

Not that anything physical appeared in the world. Not even in his vision. The information went directly into his brain. The thought appeared immediately, as if he always knew that there were five Douglas-firs in the compound, which are, of course, native to the Rocky Mountains.

As the weeks went on, The Saint would decrease the filter on HEAVEN, and Thomas would increase his self-control. After one week, he could control whom he heard, and when. After a month, he could construct realistic images in space. By graduation, he could look up information about several items and send telepathic messages to three people, all while listening to Vivaldi’s *Seasons*.

Graduation was short. The Saint removed the final filter and asked the five graduates to work through a list of tasks. It took Thomas forty-three seconds to complete all twenty-four tasks. Average.

“Goodbye. Enjoy paradise.” She still had the warm, southern accent. Clair called the ceremony a disappointment. Not that anyone cared: the world was waiting.

III. Hell

“Nothing is real.”

The grass radiated the scent of fresh clippings. No trash could be seen under the bright blue sky that was dotted with plush clouds. People occupied the park in pairs: one researching the latest fashion, the other reading the newest snapshot—books short enough to be read in an afternoon, but deep enough to warrant a feeling of literary merit.

“Those books are shams. Look at this,” Clair said aloud, projecting a copy of the *#1 Hot Summer Snapshot*. “Thirty pages and it supposedly contains ‘Twelve fully-developed themes and thirty-two symbols for love.’ It’s nothing but fluff.”

How did you find me again? Thomas said through the Telespeak v3.4.2. He had not seen Clair since graduation, a year and a half earlier. *And why do you insist on talking? It’s so . . . philistine.* He researched the word through *Inteli-saurus* right before saying it.

“Because this way you know what I’m saying has not been manipulated.”

In reality, her voice sounded faker than the thoughts he received. The soft words were dim compared to the bright, clear tones of Telespeak.

Of course, he said.

Clair was looking at the clouds, so Thomas projected a copy of *The Aeneid* in Latin.

“Do you ever wish you could go back to the old world?” she asked.

There are visual histories for that.

“I mean living in the world before HEAVEN. You know, without all this junk,” she said with a vague wave.

I like HEAVEN just fine, thank you.

“I guess that’s why you still manually translate that book.” The corner of her mouth twitched to a brief smile before her thin lips resumed their characteristic stoic line on her face.

Thomas had decided to use his old knowledge to read the book, as he did before the Transition. How did she know that?

“When was the last time you heard the birds or saw the park?”

He had heard enough. *I enjoy them every day. Now if you excuse me, I have other matters that demand my attention.* Thomas stood and walked onto the main boulevard, dashing between oncoming traffic.

“C’mon, just try it. Turn off the fake sounds.”

He entered the alley to the back entrance of his apartment building. *Fine, if that makes you leave.*

It will. Her telepathic response surprised him. He had forgotten how confident and intriguing her Telespeak voice was. *Start by turning down the noises. Turn off the music, the voices, and the videos.*

He did. The silence was unnerving. He turned on *Mandolin Concerto in C*.

Turn that off.

Thomas surrounded himself in silence.

“What do you hear?” Clair said aloud.

“Nothing.” No—the noises grew. Trucks rumbling, construction banging. Only harsh sounds remained. “HEAVEN makes things beautiful,” he rasped with an unpracticed voice. “It’s why we need it.”

“No. HEAVEN tells you everything is wonderful. It has made you blind and deaf and dumb.” She looked straight into his pale eyes. “Do you know why I talk with my mouth and listen with my ears when everyone else has long forgotten their senses? Because I fear a world that is only flashing lights and loud noises, where I must have the newest trinket just because I need something flashy to guide my pea of an attention span. I am afraid one day I’ll wake up to a world that I can no longer touch. That I will have to sit there forever unable to take my eyes off the lights HEAVEN sends my way.”

He noticed that without HEAVEN, her pimply cheeks burned red.

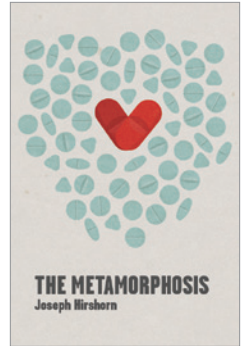
“But what frightens me the most is knowing that the power will always be there. And what can I do?”

She looked at him for a moment, then left. He stood in the alley as she sauntered away, listening to grumbling machines and looking at the ruddy brick wall caked in mud and garbage that no one had bothered to clean and likely never would. Thomas climbed the stairs to his apartment, wondering if they had always been so narrow and creaky. He realized he still needed to order dinner through the Instameal Food Printer.

As Thomas sat down to fresh tomato soup with a spinach salad, he thought of something he should remember from earlier that day. Just then, the violins shrieked their high trills on the mental radio, and the thought was gone. Not that he cared: it probably wasn't important anyway.

The Metamorphosis

Joseph Hirshorn



7:00 am

Joseph awoke from a dreamless slumber, sat up from his small metal bed and rubbed his eyes. He trudged towards a machine at the foot of the bed and placed his hand on a sensor. The machine hummed and dispensed his green woolen clothes. He took them and placed his nighttime garments into the machine. They were zipped away. He lumbered to another machine opposite the bed. He placed his hand on a sensor, and a pill was dispensed. He swallowed it; it would be his only meal for the day.

He walked out of his room. Closing his door behind him, he moved towards the elevator. The hall was filled with hundreds of doors, hundreds of people, all wearing their green clothes. They filed into the elevator.

450...400...250...100...0

The door opened. A bus was waiting for the group. They flowed in.

7:15 am

They all got out. No one glanced up at the prominent sign reading *15B-15 Train Station*; this was the same commute for all of the workers at the pill factory. Joseph sat down in the narrow Tube Train facing the aisle. A seatbelt fitted around him.

All he could hear was the sound of the train humming. Joseph stared down into his lap. His leg shook uncontrollably.

Within a matter of seconds, the train arrived at the next stop; in another moment it arrived at the next. Joseph clenched his hands together more tightly. A minute passed, and the train stopped at 27B-15. He glanced up. A woman got on. She sat down across from him. Joseph stared into her eyes and she stared back. Ten seconds later, she got off.

7:25 am

The group arrived at the pill factory. Joseph walked with the others into another elevator. They got off above the factory floor. He walked to his station. He sat in front of many monitors that showed pills being sorted and packaged. His job was to make sure no bottle inadvertently fell off the conveyer belt. If a bottle did fall off, the mechanism could become jammed. Thousands upon thousands of bottles passed in front of his eyes. Not a single one fell off that day.

10:00 pm

He walked into his room. He placed his clothes into the machine at the foot of his bed, and dressed in his nighttime garments. He fell asleep. He did not dream.



7:00 am

Joseph awoke, sat up from his small metal bed, and rubbed his eyes. He trudged towards the machine at the foot of the bed and placed his hand on a sensor. The

machine hummed and dispensed his green woolen clothes. He took them and placed his nighttime garments into the machine. They were zipped away. He lumbered to another machine opposite the bed. He placed his hand on a sensor, and a pill was dispensed. He swallowed it.

7:15 am

He sat in the train. He counted down the stops. 27B-15. His heart leapt. She walked on. He stared into her eyes and she stared back. Ten seconds later, she got off. Joseph's head slumped.

7:25 am

The group got off. They arrived at the factory. Joseph walked with the others into another elevator. They got off above the factory floor. He walked to his station. He watched the bottles. He waited for a bottle to fall. It did not happen.

10:00 pm

Joseph walked into his room. He placed his clothes into the machine at the foot of his bed and dressed in his nighttime garments. He sat on his bed and did something he never had before: he thought of her. When he fell asleep he dreamt of her.



7:00 am

Joseph awoke, leapt up from his small metal bed, and smiled. He waltzed with the woman in his imagination towards the machine at the foot of the bed and

placed his hand on a sensor. The machine hummed and dispensed his green woolen clothes. He took them and placed his nighttime garments into the machine, shaking his head at his silliness. They were zipped away. He strode to another machine opposite his bed. He placed his hand on a sensor and a pill was dispensed. He swallowed it.

7:15 am

He sat in the train. His leg shook. He counted down the stops. 27B-15. His heart skipped. She walked on. He stared into her eyes and she stared back. He smiled. She smiled. Ten seconds later, she got off. Joseph kept smiling.

7:25 am

The group got off and arrived at the factory. Joseph walked with the others into another elevator. They got off above the factory floor. He walked to his station. Thousands of bottles passed before his eyes. He stared at the monitors, but only saw her face. Then he smiled. A bottle fell from the machine. He knew what he would do next.

10:00 pm

Joseph walked into his room. He placed his clothes into the machine at the foot of his bed and dressed in his nighttime garments. He lay on his bed, unable to sleep. He fell asleep smiling.



7:00 am

Joseph hurried to change his clothes and eat his pill. Ahead of the crowd he got onto the elevator. He was the first onto the bus. He got on the train. He counted down the stops. 27B-15. She walked on. His heart stopped. He stared into her eyes and smiled and she smiled back. The ten seconds were an eternity. As she got off, he did something he had never done, something no one had ever done: he left his group and leapt up after her.

Masses of people flowed by him. There were hundreds of thousands, all separated into groups by the color of their clothing. Each group moved as one. Giant buildings towered above with Tube Trains crisscrossing between them. Large drones flew above the buildings, displaying data about the city's food production, stock prices, and other things he couldn't comprehend. Below him, under the walkway, factories lined the street, with many, many greens flowing in and out.

Joseph hurried through the crowd, careful not to draw attention to his movements.

People turned to stare at him. He was the only person wearing green on this level. A group of students, marked by their yellow attire, cut him off as they walked into the Testing and Grouping building. They were probably about to take their placement exam. Joseph had entered the same building a few years ago, before he was placed in the Pill factory due to his low test scores.

Joseph picked up his pace as the crowd pressed in around him, afraid he wouldn't find her.

He slowed—he had lost her. He stopped, shaking his head. He wouldn't let her go. He closed his eyes and opened them to see the monitor. People became pill

bottles and he sorted through them. He scanned the entire crowd and smiled. He had found her.

He ran up to her and grabbed her arm. She turned. He was gasping for breath, but he managed to smile. His body was shaking as he took her hand. She looked deep into his eyes, and smiled back.



Joseph and the woman walked for miles toward the outskirts of the city until they finally came to the wall. It was forty feet tall, made of solid concrete. Set in the wall was a thick steel door. They went down and opened it. As they walked through they heard it lock behind them. Outside the city the buildings were smaller. The further they went, the more decrepit the environment became. The buildings had broken windows and very few people were outside.

The sun had set and Joseph and the woman had passed by the last of the buildings. A vast forest lay ahead of them. Joseph pulled out a bottle and took a pill and gave one to the woman. Their supply would last for a month.

They set out into the forest to begin a new life.

Grey Danube

2008

Wood, Steel, Rubber, Repurposed Objects and Vienna

Inspired by the aesthetics of the industrial age, this piece is both ominous and quite absurd. The design of such an object is clunky, impossibly heavy, and will undoubtedly help millions of people meet their inevitable...

Haylee Bolinger, Master of Fine Arts, Sculpture

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Troubleshooting

Fallon Leyba



Troubleshooting for the DawnStar Operating System model **T-I476 (10.48.3)™**

In the event that your DawnStar OS™ is not responding, first attempt to turn the system off by holding the power button down for six seconds, and then power on again.

Unfortunately for Coral, she knew that her final exam at Quadrant Z-40 Community College would not be as simple as turning the power on and off again. She had dreaded this exam for months, compiling a study guide filled with information from dozens of troubleshooting instructions and textbooks. She recalled when she had first bought them, the entire mass of textbooks and instructions not even fitting in her Infinity Purse (she had only paid for half of the infinite space; the full space was premium and ten times more expensive). Yet mere weeks before the exam, she had compiled every single snippet of relevant information into one packet—a packet that she had studied with all the fury a very lazy college student had at her disposal. Now she was using that information to complete her final exam. In order to pass, she had to find the software error in a computer of questionable origin and then eliminate that error. Easier said than done.

Coral could sense her instructor's presence behind her, carefully jotting down notes as she tried to calm down and let her training kick in, her mind moving

methodically through each troubleshooting bullet point from her study packet. She looked over her glasses at the monitor. She had walked into the exam hall with little concern for her appearance, disheveled blond hair pulled back in a messy bun, her hoodie stained with last night's ramen. Her jeans were in better shape, at least; with only a single rip in the left knee, this pair was in far better condition than some of her other pants.

And yet, as if determined to scold her for laziness, the screen of her computer was still a vibrant, panic-inducing blue, warning codes flashing across the screen in blinding white. Time for a diagnosis.

If your DawnStar OS™ is still not responding, type in the code required to access your computer's Random Access Memory (RAM). It can be found on an inconspicuous corner of your system's packaging; the exact location varies by system. Accessing your computer's processing ability may lead to a restart, causing a flood of memory from the hard drive and thus a manual reboot of the whole system.

Coral snapped her vision toward the computer-specific access codes that had been provided to her at the start of the exam. She considered the reasoning behind opening the RAM—nowadays, opening the RAM manually was much like resuscitating a living creature. In a perfect world, she would be the first student done. In a perfect world, she would pass this exam with flying colors.

She spotted the series of numbers and letters labeled “RAM code” and typed it into the flashing white box at the bottom of the screen. She clicked “enter” and waited with bated breath.

The computer screen immediately started flashing in irregular patterns, a high-pitched whining coming from the machine in spasmodic bursts.

Then, in huge block letters across the screen:

N O R A N D O M A C C E S S M E M O R Y
F O U N D

Coral blinked at the screen with confusion. No RAM? But that was impossible! As computers had become more and more advanced over the centuries, and viruses along with them, technology had to adapt itself and build several security programs into each computer to prevent the deletion of RAM, accidental or otherwise. Once this development of cognitive thought in software had been discovered, it had taken humanity a few hundred years to catch up. But they managed. It seemed, however, that they had all left Coral behind—she didn't even know how this computer was functioning!

Coral looked back at her instructor, a tall, thin, greying woman that looked equally perturbed by Coral's system failure. She seemed to accept it as high-level test, and Coral as an advanced student. And so, she waved at her to continue.

The student in question had no clue about how to deal with a computer with *no RAM*. She tried to calm down. Let the training kick in. She decided that it was time to employ more advanced tactics, like those from her textbook *IT in the Making: How to be the Best of the Best*.

In the event of a complete system failure, one that cannot be resolved on the physical plane, one must turn to what is known as The Bond, a synthesis of human consciousness and electric wiring. Only advanced IT specialists should attempt. IT trainees should avoid at all costs.

But she needed to do this. Her career depended upon it. Coral began typing in the white box at the bottom of the screen.

/Initiate _ Bond/

/?Code _ 1345?/

/USER _ 54321/

She leaned back in her chair and waited. A few seconds later, a response popped up on the screen.

/NAME?/

Coral didn't remember anything about needing to be on a first-name basis with her computer for The Bond to work, but she shrugged it off. Machines didn't lie.

/USER/

/CORAL _ JONES/

The system tweeted in an almost cheerful fashion, the screen blanking white before turning blue again.

/Bond _ Initiated/

/Begin/

/?/

/YES//NO/

Coral clicked on the yes. And immediately, a kaleidoscope of color swept across the screen.

Once The Bond has been initiated, a swirl of shapes and/or colors will appear on your screen. The exact images will vary between systems. Staring at the center of the swirl for 10 seconds will transport your consciousness into the

System. Do not remove your eyes from the screen. Failure to do so could result in permanent dissolution of the IT's consciousness.

Coral stared at the screen

10

9

8

7

6

5

4

3

2

1

Her body slumped forward, smashing her face into the keyboard. Code shot across the screen.

/HGF5&7/

/CODE _ UNRECOGNIZED/

/PROCEEDING _ WITH _ BOND/

.

.

.

When Coral regained her faculties, she suddenly felt extreme discomfort. She seemed to be in a white, barren room. She lifted her hands up. Her physical image seemed to have translated into code without any severe deviations, and her clothes followed suit. She looked around the great, blank expanse until her eyes fell upon a figure in the corner of the room. She walked toward it, watching in fascination as the figure slowly became a tall woman with blonde hair styled in a helmet-like bob. Her eyes were glowing white, pupil-less, and vacant.

Once you have successfully entered your OS, locate your External Hard Drive. For your own safety, do not mention pigeons or the color purple in its presence. These commands are reserved for security protocols ONLY.

“Greetings, User,” The woman said, her voice sounding like a mechanical hum. She was dressed in odd, metallic silvers, a boxy shape to her clothes. The high collar of her shirt concealed her entire neck, but the shirt itself was cropped to just above her belly button. “I am External Hard Drive. You may call me EHD.”

“Hello,” Coral said nervously.

“How very odd,” EHD muttered, squinting her eyes and dimming their light as she looked Coral up and down. “We do not have round things in the system. Most odd. Most odd indeed.”

Coral looked down at herself, assuming that EHD was referring to her plump figure and protruding stomach. “I learn to live with it,” Coral shrugged. “I’m sure you will too.”

“Apologies, User. I meant no disrespect.”

“No, it’s cool.”

EHD looked at her as if she *sort of* got what Coral was saying, but she moved on anyway. “If you will follow me, I will take you to the Security Access Memory Module.”

Coral followed the tall woman as she walked off to some corner of the room. Coral struggled to find where the room’s walls ended and the floors began. “Don’t you ever get bored of this room?”

“It is not part of my programming to disagree with it. I have learned to live with it. I’m sure you will too.”

Coral was shocked to have her own words thrown back at her. She muttered a quiet apology.

“It is quite all right, dear.”

In the meantime, the pair seemed to have reached some sort of barrier. Coral could only assume that it was a wall, but its eerie white color made her wonder if it was just transparent. But before Coral could ask about it, EHD waved her hand in front of the wall. A part of the blank whiteness melted away, a wall of acrid yellow taking its place. EHD stepped into the blinding yellow, but Coral held back a moment. The color made her feel far too nervous.

“Do not worry, the pigment is used solely for repelling viruses. It provokes nausea and anxiety in Codeless Ones like you.

Coral nodded and followed EHD into the disgusting pit of yellow.

“Hiya,” a voice sounded as soon as Coral was clear of the blinding yellow. She found herself, once again, in a sea of white.

Your External Hard Drive should automatically escort you to your OS’s Security Access Memory Module. This is standard system protocol. Once the

OS has established that you are not a threat, you will be permitted to begin the necessary repairs that warranted your entry into the system. For your own safety, do not mention cats or the number nine in the Security Access Memory Module's presence. These commands are reserved for security protocols ONLY.

“You must be the IT kid. Coral, right? I’m Security Access Memory Module, but you can call me SAMM.” Coral looked around, trying to locate the source of the distorted baritone voice. A young man with messy, hot pink hair and mismatched eyes appeared out of nowhere, greeting Coral with a little wave. He, unlike EHD, was not dressed in metallic silvers. He was dressed in what Coral considered to be rather normal clothing—a baggy sweater and jeans.

“How come you don’t talk like EHD? How come you don’t *look* like her?” asked Coral, cocking her head to one side.

“Flash drives are pretty worldly programs. They always come through me before they get to EHD. Sometimes we chat. I learn your weird codeless speaking patterns and clothing styles so Users won’t freak out.”

“I suppose that makes sense.”

SAMM seemed to approve of the exchange, for his eyes, one blue and one green, glowed brighter in the blank whiteness of the room. Coral noticed for the first time that he had yellow stars for pupils. “Well, I think it’s time we put you through a security check, don’t you think?” He asked, turning those iridescent eyes in Coral’s direction.

“Yes, I think that’s a good idea. I don’t know how fast time passes in here. I have an exam to finish.”

“Ugh, testing again?” SAMM grunted. “I was wondering where RAM went. We kind of panicked down here. Especially EHD.” His last sentence was punctuated with a suggestive waggle of the eyebrows. Cherry red pixelated high on EHD’s cheekbones. She managed to look crippled with worry nonetheless.

“You guys *know* when you get messed with?” Coral spluttered in disbelief.

SAMM arched an eyebrow. “Of course. It’s my job to know when things go wrong. I just pass the word on to the rest of the system.”

Coral had the decency to feel guilty—something that only fueled her drive to fix the system failure. “All right, do your security thing.”

SAMM responded by brushing his hair away from his forehead, revealing a third, crimson eye right in the middle of it. It buzzed loudly before sweeping over Coral’s form in a few fluid motions, then it beeped cheerfully and SAMM let his hair fall back into place, hiding it from view. “You seem pretty clean.” He grinned.

“Now show me the code,” Coral said, determined.

“Whoa, I can’t let you in the raw code,” SAMM replied, waving his hands. “It’s too dangerous! Your code might be absorbed into the motherboard and then you’ll *never* get out!”

“It’s the quickest way.”

“User, I’m afraid he’s right,” EHD added, staring blankly in Coral’s direction.

“Do you want RAM back or not?” Coral asked, hand on her hip. That same cherry red colored EHD’s cheekbones once more. “I guess I have my answer. Let me in the code.”

SAMM could only nod solemnly. He stepped forward, reaching out until he was touching Coral's face. She suddenly felt like she was being jolted with a thousand volts of electricity. She was beginning to see a flurry of colors. Then that flurry of colors became a flurry of numbers. Then numbers and letters. Finally, she was in a dark void, strings of code zipping past her in blurred lines.

Search and Destroy. Well, perhaps Search and Restore would be a better motto. It didn't matter. Coral was on a mission. Separated from the vibrant and disturbingly human personalities of the programs, she could finally concentrate on her exam. She was trying to graduate! She couldn't chat with programs *forever*! Nevertheless, she could feel something pulling at her—something she could only assume was the code itself. Her time was short.

Coral took a sharp, pixelated breath and began to propel herself forward with what seemed like sheer willpower. She focused on the blurring lines of letters and numbers.

In the event that you find it is necessary to enter The Code, remember that the User Interface has the ability to use cognitive thought to access specific code. Use the passkey: Sergeant Pepper's Lonely Hearts Club Band

Coral began to scream the passkey in her mind, followed by as many thoughts as she could muster pertaining to Random Access Memory. The pulling feeling was getting stronger. Her skin felt like it was being pulled away. In fact, she could see pixels of herself breaking off and floating away, their destination unknown.

After what seemed like forever, she found herself rushing through what felt like time and space itself. She felt her arm reach forward. She felt her hand close around warm flesh.

She was hurtling back into another white room.

When her coded feet hit the floor, she collapsed in a pile of stained sweatshirt, completely out of breath.

“Hey, Coral! All right?” SAMM’s voice called. He loomed over her, the combined light from his hair and all three of his eyes nearly blinding her.

“Yeah, m’fine,” she grunted, swatting his face away. She stood up on wobbly legs. “Did I find RAM?”

“Seems like it,” SAMM responded, glancing behind Coral’s shoulder with a soft smile.

Coral turned and found EHD embracing a very tall and very muscular figure, sobbing with all the heart a computer program can muster. The figure, dressed in a t-shirt and camouflage shorts, patted EHD’s back with a dark-skinned hand, muttering apologies and I-love-yous into her hair.

And then, Coral, pathetic IT trainee and lazy college student, suddenly felt that a pair of computer programs had more love in a single hug than Coral had found in an entire lifetime.

“Finally,” SAMM groaned. “We can start running programs again.”

Coral sighed. “Looks like my work here is done. Are you going to send me back now?”

SAMM looked at her, starry pupils swirling in their irises. “Sure.” He held out his hand.

Coral took one last look at the happy couple in front of her before taking SAMM’s hand.

“You’ll come back and visit though, right?” SAMM asked. “We don’t get many visitors here—The Bond is kind of new. Not many people want to try it. It gets lonely down here.”

“I’ll come back and visit,” Coral beamed.

SAMM seemed satisfied with that answer, looking like he believed her. Coral knew she meant it.

He stepped forward, leading her back out of that glaring white space, through a flurry of colors, and then....

Coral nearly choked on the sharp gasp that signaled her return to the world outside of the computer. Her head swung back, knocking against her instructor’s stomach.

The woman grunted in pain, hissing through gritted teeth, “Get back to work!”

Poor IT trainee Coral Jones tested the keyboard and clicked the mouse a few times. Everything seemed working again. RAM was back online.

“Done,” she breathed.

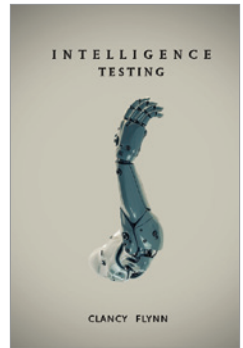
“And passed,” the instructor grumbled, jotting down the results on her clipboard before walking away.

Coral sat there for a moment, breathing in her success, when a small window popped up on the monitor.

“Thank you,” it said. Coral leaned forward. Sure enough, there, in the corner of the screen, three figures were waving back at her: a large dark-skinned man, a willowy blonde woman, and a boy with hot pink hair and three eyes.

Intelligence Testing

Clancy Flynn



Evans came before Hawthorne on the register, and Hawthorne was painfully aware that he made his first impression as an excuse-giver, a lie-teller, a no-good. “Evans wasn’t feeling well this morning,” he volunteered into the vacuum of class routine, the unstopping rhythm of call and response. “He has a medical note on file. He asked me to tell you.” Dr. Gardner responded with a curt nod and went back to calling names. Hawthorne made an effort to sound assured and confident when Dr. Gardner came to him, and hoped he’d suppressed the incipient flush of embarrassment that threatened to spread across his cheeks as soon as he’d started speaking.

Gardner took no notice either way. He threw himself down into his desk chair and pulled at his grey curls while he spoke. “So. Welcome to Practical Cognitive Enhancement. Let’s be clear from the get go, here. It does what it says on the tin. Cognitive Enhancement. Not a class about cognitive enhancement, not the study of. Just the real deal.

“I imagine, if you’re here, you know what you’re getting yourself into. Since I was your age, there have been enormous changes in the way we think about intelligence. We used to think it was relatively constant, a genetic trait, tempered by your experience and your education. But now we know that the brain is much more plastic than we thought, and advances in chemical therapies and neural prosthetics have meant that we can be smarter, more focused, and more creative than was ever thought possible a decade ago.

“So, what can you expect? I’ll run a battery of tests when we first meet. Brain scans, blood tests, your standard pen-and-paper intelligence tests. We’ll talk about your goals and your interests. I’ll use that information to develop a personalized cocktail of pharmacological and neuropathic agents to maximize your intelligence. We’re talking nootropics like aniracetam. Concentration drugs like modafinil. Cognitive-behavioral training. The aim being that, should you prove to be a strong enough candidate, if your test scores are high enough and your brain scans show strong predispositions towards certain areas, you’ll be able to get funding at your university for the neural prosthetics that will make you smarter than regular old humans could ever hope to be.

“I recognize that it’s a bit awkward for you guys. You’re too old to be Brain Babies. Your parents wouldn’t have given you neural prosthetics while you were developing; the technology was too new. And you’re below the age of consent, so I need your permission slips, please, whenever we meet. But the world you’ll be a part of when you leave here, when you get out of school, will be an enhanced world. A smart world. And I want to do everything I can to prepare you for it.”



Evans had startled Hawthorne in the bathroom that morning. Hawthorne had been half asleep and only noticed Evans sitting on the floor in front of the toilet a full minute into brushing his teeth. Evans, a pale, over-thin boy with an angular face, pulled his lips over his teeth in the suggestion of a smile and wagged the fingers of his prosthetic arm as a kind of good morning gesture at Hawthorne,

who nearly choked on his toothbrush and immediately spit out a mouthful of suds.

“You okay?” Hawthorne asked, lips still white with toothpaste.

Evans nodded in a way that didn’t reassure his roommate. It was hardly a week into term and Hawthorne didn’t know how worried he should be about Evans. He was aware of Evans’ prosthetic arm and knew that the original had been lost to a poorly treated bone cancer years and years ago, before safe, high-dose chemo treatments and anti-resistance drugs had gone mainstream. Evans had suggested obliquely that it was recurrent, an idea reinforced by the mountain of orange pill bottles on his desk. An oral chemotherapy didn’t seem out of the question. Hawthorne didn’t ask for confirmation, and wasn’t sure how much he should pry anyway. “Have you been sick all night?” he asked, avoiding Evans’ eyes, trying not to stare.

Evans just furled his legs into his stomach and rested his head on his knees.

“Could you tell Dr. Gardner I can’t make it today? I have a note on file, if he asks.”

“Sure,” Hawthorne said, though he didn’t like the request and would have preferred to not be a go-between. Faced with Evans, cachectic and off-armed, it felt like a petty objection.

“Thanks,” Evans murmured. He unfurled himself a little and leant towards the toilet. Hawthorne left as quickly as he could and closed the door behind him.

That afternoon, though, Evans was out of the bathroom and looked none the worse for wear. He was reading at his desk and smiled at Hawthorne when he came in, raised his prosthetic hand in lively salute. Hawthorne did his best not to stare at it, a choice made difficult by the fact that it hardly looked like an arm at all. Silvery and deconstructed, it followed the vague shape of a bicep, suggested

the curve of a forearm, and ended in honeycombed digits with sensitive fingertips. Beneath Evans' loose fitting shirt the complicated integration with his chest and clavicle, a swirl of flesh and metal, was visible. Hawthorne appreciated that if Evans had been some kind of sculpture it would have been beautiful, balanced, and attractive, but he still wished that Evans had scorned this new aesthetic for one of the flesh-real models that were readily available. Hawthorne pulled his gaze away and focused on unpacking his messenger bag, stacking his notebooks on his desk, arranging pens and highlighters in strict order.

"How was class?" Evans asked, smiling bemusedly at Hawthorne in a way that made him fumble a pencil, feeling caught out.

"Interesting," Hawthorne said, bending down to pick it up. "It was just an orientation. Explained what he's offering—tailored pharmaceutical programs, regular testing. It's geared toward prepping us for neural augmentation. At uni."

"Testing?" Evans closed his book, his prosthetic arm powerful enough to slam it shut with a snap, the spine resting in his palm.

Hawthorne nodded. "Yeah. Like, brain scans and blood tests and whatever. Follow up."

"Glad I missed it," Evans said.

"Not up your alley?"

Evans undid the lid from a prescription bottle and dropped two blue tablets into his hand. "I'm not sure I want another person getting involved in my biochemistry, if you read me." He smiled at Hawthorne, winked, and tossed the pills down his throat.



“Take a seat, Hawthorne.” Dr. Gardner was wearing augmented reality glasses that flickered with a ghostly light the same pale blue as his eyes. Hawthorne could just make out the small mirrored image of his school photo, the scrolling data of his file making its way across Gardner’s vision.

Hawthorne had never seen a room like Gardner’s new lab. It was nothing like the reconstructed Victorian buildings that made up the rest of the school, with its new-historic aesthetic, its rococo gothic nostalgia and rampant skeuomorphs, its digital capture chalkboards. The lab was built on the clean lines of functionality. Everything was antiseptic white, from the open MRI machine to the ergonomic mesh chair Gardner was ensconced in.

“I’ve had a good look at your test scores. You’ve not been dabbling in smart drugs before, have you?”

“No, sir,” Hawthorne answered, a thrill of anxiety setting his knee bouncing.

“Never.”

“Good. That’s good. Because you look like an excellent candidate for the kind of treatment on offer. You have very competitive imaging, very good brain structure, especially if you’re looking to study a science at college. And your scores don’t lag very far behind. I think the proper regimen could place you at the front of your class, absolutely.”

“That’s great,” Hawthorne said, flushing with a pleasant embarrassment.

“Are you interested in neural enhancement, Hawthorne?”

“Of course.”

“And why?”

“Well, I want to think the best that I can. I want to learn whatever I can.”

Gardner smiled. “Very good reasons. No mention of test scores. No placement anxiety. That’s what I like to see. Just formalities left, I suppose. We’ll start you coming in for weekly testing, just like today. Is that okay?”

“Yes, sir.”

“Good. Then I’ll see you next Tuesday.” Gardner paused for a moment and scrawled something on a blue prescription pad. The paper peeled off, like it did in the old days before prescriptions were computer printouts, but a digital copy flickered momentarily in Gardner’s augmented glasses. “You give me your permission slip, and I’ll give you this script.” Hawthorne hesitated, and Gardner looked him full in the face for the first time. “What’s wrong?” he asked, flicking his glasses up onto his forehead.

“My father hasn’t signed anything,” Hawthorne just managed to choke out.

“Well, get on it, and we’ll make a trade,” Gardner smiled, waving the prescription.

“No, you don’t understand, sir. He won’t sign it. He thinks it’s unnatural. That it’s unethical. And that I need to get by fair and square, on my own power.”

Hawthorne remembered his father explaining his position, calmly but firmly, citing a line of impressive ancestors, unenhanced and unaided by anything but a good education and economic advantage. Hawthorne couldn’t seem to describe this new opportunity as part of the same tradition.

“Ah. I see.” Gardner sighed and replaced his glasses. “That’s not the most forward thinking position, is it? Not uncommon, though. There’s still a lot of resistance to what we’re doing here.”

“What do I do, then?” Hawthorne asked.

Gardner shrugged, his AR glasses already flickering with his next appointment’s profile. “You talk to your father. Or get him to speak to me. Because there’s nothing else you can do. Not until I have his John Hancock on that piece of paper.”



Hawthorne was still moping when Evans looked up from several hours of intense, concentrated study. He stood and stretched, cracking his spine with a very organic pop. Seeing Hawthorne staring into the ceiling, he sighed. “What’s eating you?”

Hawthorne explained his father’s position, while Evans frowned and nodded.

“But university placement and neural prostheses are based as much on brain scans as test scores. You need the drugs for good scans. If he understands what it means...you don’t think he’ll say yes?”

“I know he won’t say yes.”

“Then there’s nothing for it,” Evans smiled, going to sit next to Hawthorne on his bed.

“What do you mean?”

“Well,” Evans said, taking Hawthorne’s hand in his cool metal one. “You’ll have to do it yourself. Can’t leave it to anyone else.”

“You’re one to talk,” Hawthorne spat, wrenching his hand out of Evans’ grip with a ferocity that surprised him. “Stuck in this room, sick on your prescriptions,

afraid of people messing with your 'biochemistry.' Is that your choice? Do you think you can do whatever you please?"

Evans looked stunned for a moment, and Hawthorne hesitated, afraid he'd gone too far, taken his frustration out on a physically and maybe emotionally frail boy who'd been through God knew what. Then Evans laughed. "You're not the brightest spark, are you?" he said, still laughing, hardly breathing. "You don't know what I'm doing?"

Hawthorne turned away, anger rising quickly again. "Dying?"

Evans shook his head, a smile spreading across his odd-angled face. "No, no. Not at all. Not anymore. The pills aren't for what you think. Or not all of them are."

Evans remembered his first spontaneous fracture, the first cancerous break, the sizzling pain as his scapula cracked for no reason besides the fragility of his body. The futility of chemotherapy made him weak and sick, the cancer left his bones brittle and faulted. He remembered that helplessness, and saw it reflected back, painlessly, by Hawthorne.

What Evans also remembered was the revelation of the neural prosthesis he'd been given to better control his new arm, the productivity accompanying the focus drugs that helped him through the prosthetic adjustment, the clear-headedness that came with the neural protective drugs he'd been supplied during chemo. He remembered the power in the prosthetic arm that now replaced the delicate original. For him, it was worth all the pain and the sickness to triumph over the body's limitations, to express his mind fully.

"You have to take control of your own life," he said as Hawthorne shook his head. "You are the only one who should make choices about your body."



Evans didn't move from his bed when he heard the knock. Gardner opened the door to find him laid out, cross-ankled, dressed in school uniform with a book in his lap. He looked up blankly at Gardner. "Can I help you, sir?"

"Is Hawthorne in? I need to speak with him."

Evans shook his head and pushed his hair behind his ear with his left hand, letting Gardner register the pale gleam of his prosthetic. "He hasn't been back since lessons. I think there's athletics now. Something like that."

"Right. Thank you—"

"Evans."

"Ah. Evans. Of course. Why aren't you at athletics, then?" Evans pushed up his sleeve to show off more of his prosthetic. "That's not stopping you, is it?"

Evans looked slightly affronted. "I'm sorry, sir, I don't think I've explained about my condition."

"I've got your profile," Gardner said, indicating the flickering data on his AR glasses. "And I see that you're not too enthusiastic about attendance. You're on my register, but I haven't seen you before."

Evans shrugged. "I realized it wasn't for me. I'm still doing chemo. I didn't want another opinion about what should and shouldn't be going in my body."

“Very understandable.” Gardner went to Evans’ desk and sifted through the pill bottles there. “You are on just about everything under the sun. Certainly more nootropics than I usually prescribe.”

“It protects your brain from the chemo drugs. That’s what they told me.”

Gardner looked at Evans squarely, one hand on his hip. He looked young like that, though his hair was already silver. “You think that I’m stupid.”

Evans didn’t smile, but he didn’t shy away, didn’t flinch. “I don’t think that you’re smarter than I am.”

“No, looking at these cocktails, I very much doubt that I am.” Gardner’s AR glasses flickered and flashed as he picked up pill bottles. “And I’m sure you already have a neural prosthesis, if you have an arm like that.”

“Yes, sir.”

“But I don’t think your stash is entirely legit, my boy. Not at all.” Evans said nothing, knew that there was nothing he could say. Gardner continued to go through his drugs, checking Evans’ supply against a blue prescription slip. “I can keep my mouth shut, if you can,” Gardner sighed, passing the paper to Evans. “Hawthorne should have these. If he wants. He doesn’t deserve to be at a disadvantage. You know what to look out for, if there are problems.”

Evans nodded, scanning the list. “They’re very safe drugs.”

“Nonetheless. You’re in charge of one another, in charge of yourselves. So take care. Be smart.”

Roomba Painting #1

8' x 12'

Pittsburgh 1957

4' x 21'

2005

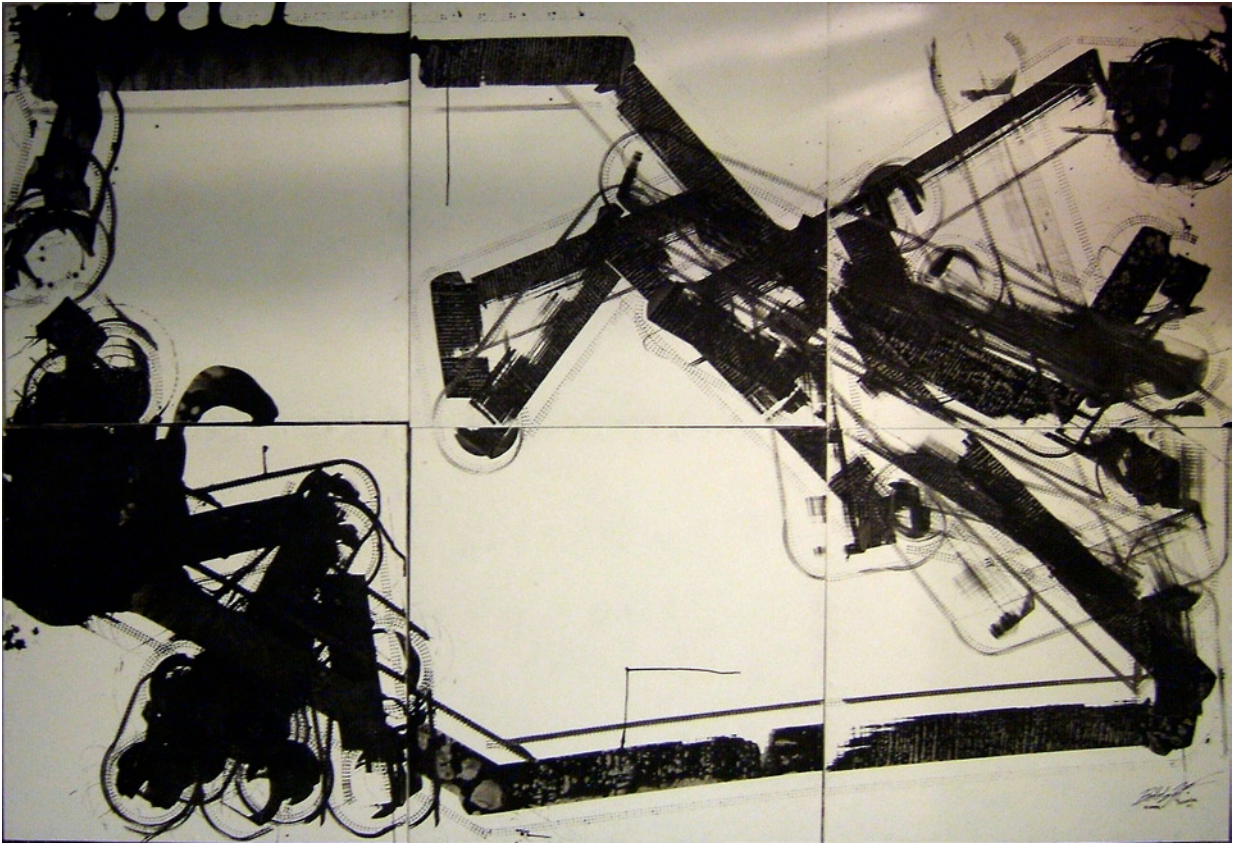
I used the Roomba, a robotic vacuum, to create this series of paintings. I converted the Roomba from a room cleaning device to an art-maker by removing the dust collector and vacuuming system and replacing it with a paint reservoir. Artists have been playing with robots to make art since the 1950s. My work is an extension of this genre, repurposing a readily available commercial robot.

I wanted to create a self-portrait of a generation, one that grew up with access to a vast amount of information and constantly bombarded by advertisements. The Roomba paintings prove that a robot could paint a reasonably complex painting, and do it differently every time; this version of the Turing test was successful. However, I had to stop after I realized that the robots were the creative ones and were only using me to prep their surfaces.

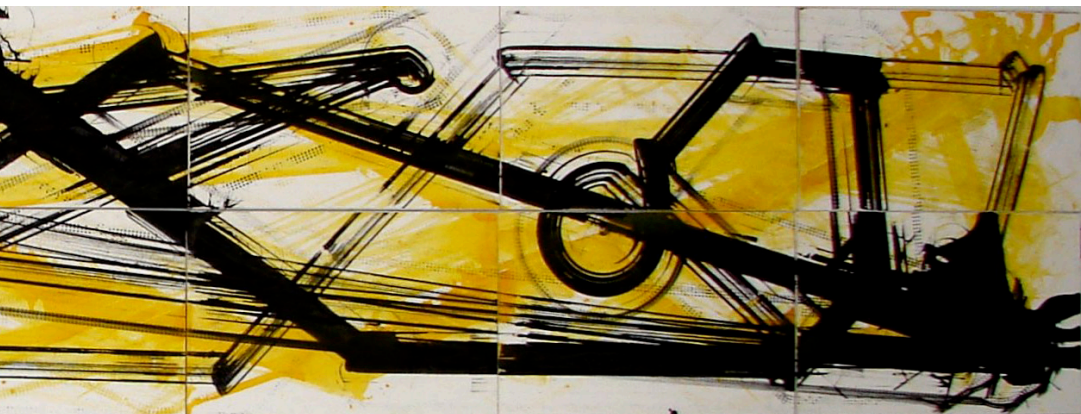
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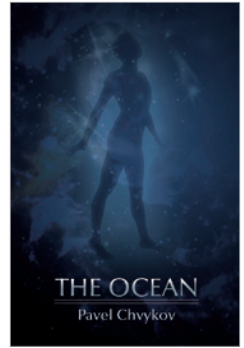
Roomba Painting #1



Pittsburgh 1957

The Ocean

Pavel Chvykov



I closed my eyes and remembered my first time...it's a feeling no one ever forgets. Once you've been there, you could never bear to give it up—to give yourself up. “The hatching,” as it's been called since I first opened it to the world. It spread like wildfire from that day. Now, less than seventy years later, most of the first-world countries teach it in schools; many kids go through it before even graduating. It's harder for the older generations, of course, but they still try, they try so hard.... It's amazing how something so simple and natural could stay hidden for so long, and take hold so quickly after its discovery.

I wasn't the first to get there though. Far from it. People have been “hatching” since prehistoric times—druids, witches, saints, prophets, monks. I wasn't the first to teach it, either: most of the world's religions were founded by those who wanted to pass on this gift. They called it enlightenment, or the visions of heaven. They tried to attract students by explaining its bliss, by performing miracles. They taught meditation, piety, love. But you can't explain it; words are shallow. Crowds clung to the words and lost the meaning. The few who began to understand didn't bother trying to teach. Others didn't even bother trying to come back. But they were all missing the point.

The time had to come when people could care, could be receptive to teachings, and had the tools to communicate them. When the cultural and spiritual drought known as the “technological revolution” passed two hundred years ago and all mindless jobs were outsourced to technology, people were forced to

start exploring their talents. The transition into this new age was anything but smooth, nearly exploding into a third world war simply due to the sheer boredom most people experienced, once they no longer needed to work for their bread.

Thankfully the pressures were released before things became dire. Human values shifted in the right direction and most people found paths to self-realization in a constructive, rather than destructive way. Technological, scientific, cultural, and social progress accelerated. People worked for their talents and abilities, doing only what they loved, and the results were incredible. The sciences and arts blended together, reinforcing and promoting one another; logical and emotional talents became intertwined in the push for discovery.

As part of this cultural revival, it was not long until religion once again emerged as the center of progress and investigation, reclaiming the role it had occupied before the technological revolution. However, this time, we possessed diverse and rich tools of mathematical and artistic expression to capture our newly emerging understanding. Eventually, society reached the point when people were spiritually and intellectually ready to understand the deeper level of reality. I just happened to be in a position to tell them about it.

I opened my eyes and looked around the room. I marveled at how much the world had changed in these seventy years, and how little of that change was visible. Dirty laundry in the corner, an old all-too-soft couch, an unpolished wooden desk. It seemed like nothing had changed. I smirked as I remembered these same things from my childhood—it's been a while since I've looked at them with my eyes. These eyes were getting weaker anyway, as age sank deeper into my body. For a long time now I'd been feeling the connection to my physical form weakening—it was harder to get up, to walk, to think, but it was becoming easier to sink into the ether. In infancy and old age we are less burdened by knowledge,

by facts and responsibilities that bind us to physical reality. As nature corrodes away our bodies, we sink in and eventually dissolve, leaving our physical form behind completely. Perhaps this is why in the old times most of the “enlightened” were those nearing their end.

And now I was nearing mine. Today. It was time for me to once again bet my life on an idea, on my understanding of reality. But the fruit was too sweet to pass by. Once again, I was not the first to try this—potions of immortality and resurrections have been rumored since prehistory, but the success of those before me was sparse and unproven. Now I was dying myself, and my connection to the ether had become strong enough that I knew exactly what it meant, but my mental capacity had not yet dropped enough to stop swimming. The idea to try this self-resurrection had been suggested in the literature more and more since “scientific” study of the ether began. However, the prior trials were not controlled well enough because they had to be conducted hastily on terminal patients who were not yet ready. In all of these cases, the success was at most marginal—memories were nearly all lost, leaving only the occasional visions and dreams of prior life, and the soul was nearly dissolved and had to form anew as in any other infant.

I hoped I was better prepared. I had spent my life diving, going deeper than most, almost losing hope to return, and yet returning. I was also the first healthy, fully conscious volunteer, and I had a perfectly suitable new body. The boy was transferred to my institute after the doctors gave up hope, having exhausted all traditional medical options and telepathic methods. I looked him over myself, examining all the strands still connecting to his body within the abyss of the ether, but none led me to anything even remotely like his soul. Most of these connections were just artifacts of the remaining karma and the persisting, yet

futile attachment of his family. Other than his coma, the boy's body was totally healthy. We were keeping it on life-support systems, while I prepared to face death.

I sank into the familiar luminous safety of the ether and watched my body float through the rooms of my institute, as I was too tired to walk. Flight was the second easiest and most practical outcome of the discovery of the ether. Telepathy was the first; it was the apex of the progress achieved in all the numerous languages of sciences and arts, allowing people to seamlessly communicate thought and emotion, to understand reality directly and precisely, untainted by the filter of our senses. The hatched "butterflies" were still a minority, and most of them were beginners, but they were already showing the transformative power of telepathy, as the concepts of partial inter-soul blending and group superintellect began to bear fruit.

I arrived in the room where we kept the boy, rejoined my body and greeted my fellow researchers and friends. The institute was founded shortly after the discovery, and we have been learning to harness the power of the ether ever since. Over the years, we have achieved many things, such as large classes of matter manipulation (levitation being the simplest), the ability to run fundamental scientific experiments "only" in one's mind, and exploring future world-branches. The capabilities of the ether within the material realm are limitless, as it is fundamental to the material world. However, because we are confined to our material bodies, because our souls are thus bound to matter, our power over the material is finite. It is progressively harder and more dangerous to dive deeper, reaching for the layers that control the more fundamental aspects of our material reality.

Reincarnation in a new body is not the easiest of tasks. You must cut your own safety rope, your bodily connection to material reality that you had from birth, and yet swim back to the surface, retaining as much of your dissolving self as possible. The rest of my group was to connect to my soul and to help me while I was under, keeping me in one piece and guiding me to my new home. We did not know how much effort would be required from any of us, or what the challenges would be. But I hadn't known what I was getting myself into the first time I hatched, either. The familiar feeling of excitement in the face of the unknown once again flooded my feeble body. Perhaps this excitement was what kept me alive over all these years.

You don't need much equipment for a telepathy lab. Only the boy's life-support system looked anything like the technology you would expect in the room. Everything else was simply meant to create peace, quiet, and comfort, with minimal clutter, to make the ether smoothest at the place of entry. Even these conditions were by now more a tradition than a requirement, as diving became second nature for all of us. It was about to become first nature for me. We all took our preferred positions and dove in.

This was a most ordinary ritual, one that we did many times per day. Yet it this time it felt new—for me, but also for the others, as I saw their souls surround me. I would say we were all excited, but excitement does not exist in the ether. Emotions are strange things that, while being formed out of the very ether itself, become silent when you are immersed in it. Desire, a materialistic consequence of emotion, also fades. Thus, I felt neither fear nor worry in the face of my imminent death. I took one more moment to remember my life, and watched the emotions swirl in around me. At this point, it was not a matter of sentiment, but a matter of bringing up all of my memories so that I may bring at least some

of them with me. Memories are stored in our neural circuits. It is thus hard call them up while you are under, and impossible to hang onto them once the connection to the body is cut. Only the emotional spectrum of events would remain, which might reconstruct some similar memories once I entered the new brain. I was ready, surrounded by my life whirling around me. It was strange to see everything that I will be bringing with me right here, while all else perished with my dying body.

If you understand reality to the necessary level to hatch, and especially once you've been there, once you've seen your true self, you would never again have any need or reason to perform actions against your soul, against others, against the ether. Cutting your soul from your own body is unnatural, and challenging to perform, especially while holding your tightest composure in the awareness of the self. That was another reason I needed my colleagues—to kill me. They had hatched too, so this was not easy for them. It was an exercise of incredible willpower. I weakened my connection to the body as much as I could: my heart slowed nearly to a stop, my brain activity decreased, but I still needed them to cut the strand, the steel cable firmly holding me to life. My advanced age was the only way this final cut was possible—the steel was rusted through, and would soon break of its own accord.

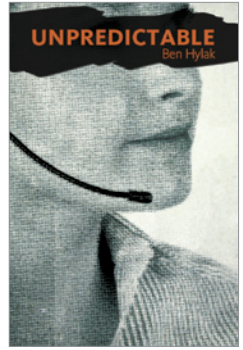
And then I felt this cut, like a spear of molten hot glass piercing my brain, as the neurons stopped firing and my memories started draining. The pain was outstanding, unbearable, but it quickly subsided, as I was no longer connected to it. I watched my body slump down to the floor of the lab as I felt myself sinking deeper, my twister of memories spreading away. I gathered my composure and launched up at the boy's soulless body. I had established a strong connection with it before going under so I could at least find it, but now that my main tie

to the material world was lost, this strand was barely there. Yet I found it. I felt myself go through the boy's material form with no connection. My friends could still see me and I them, and they tried to help anchor me down to his brain. We all knew how to do this while alive—this connection forms part of the basis of telepathy. However, connecting to a dysfunctional brain without your own material form, sinking to deeper layers every second, is different. I attacked his neurons again and again, forcing them to fire, to respond to some of the emotions still whizzing around me. Mirror neurons...imagination...empathy. These were my only points of contact with this soulless body.

I saw the boy lying on his bed. His eyelids lifted. The ceiling lamp illuminated his emotionless pale face. I made an effort and blinked. I was staring back at the lamp. I did not remember, but I knew who I was.

Unpredictable

Ben Hylak



“Good morning, Ryan. The date is Wednesday, November fourth, two thousand and forty eight. In the middle of the week, you are usually acutely exhausted, so an extra shot of caffeine has been added to your coffee. I have prepared eggs and bacon lightly salted with a side of whole wheat toast to ensure a healthy start to your day, with a total of only 370 calories. This will permit you to enjoy an additional 2,000 by the day’s end, provided you attend your Wednesday spinning class, 7:00 PM at the Men’s Club.

“For your wardrobe today, I have selected for you a red shirt and skinny tie that is striped with a light salmon color, khaki pants, and brown shoes. You have not worn this particular wardrobe configuration in the last 187 days. I am aware that you have a preference for the color red on Wednesdays, and it’s also the favorite color of your mother, whom you are scheduled to visit on your way home from work today.

“To refresh your wardrobe, I have researched and purchased a variety of clothes from your favorite retailers that match your style and are in your size and within your budget. In addition, the next generation LivTek tablet has been purchased; it now features 3000 terabytes of storage and will make an excellent replacement to your current tablet, which is almost at capacity. Your vehicle has been started and the ambient cabin temperature set to your preferred 68°, and the fuel tank is full to $\frac{3}{4}$ capacity. Your emails, ranging from job requests to sales pitches, have been replied to, based on how you have replied to similar emails in the

past. I also bought your mother a birthday present based on her current online shopping habits—a small, handmade glass elephant from Japan, which will be delivered, wrapped, to your office at 3:00 PM for you to bring with you on your visit today. If there is anything further you need, please advise. I’m here to serve you.”

“She’s good,” I thought, rubbing my forehead. Even before I could fully separate my eyelids, which felt as if they were glued together, my day seemed to be well mapped out. All of the important decisions were made and the duties were taken care of. Even without my participation—without so much as a thought crossing my mind—I was ready. It was great, but also a bit intimidating, especially because everything was so accurate. The shirt and tie were the perfect choice for today. If I had remembered it was my mother’s birthday in time to order something from her beloved Japan, that’s exactly what I would’ve picked out. And while I hoped to find a mistake in the emails that she had responded to, I found myself reading the emails in my own voice, and the content, the tone—even the jokes!—sounded just like me. I couldn’t tell the difference. Basically, all I had to do was get out of bed and walk through the steps of my preplanned, prepackaged day. Now look who had become the robot...!

She was Ana, but of course we all have different names for her. She or It, I’m not sure which, was a software named LivAssist developed by LiveableTech, a company that produces almost every household appliance in the world. They make smart ovens, smart refrigerators, smart cars, smart thermostats, and above all, they make dumb people. Without putting any previous thought into the matter, I had woken up to the realization that I was powerless. I looked into the mirror as I adjusted the tie around my neck, tied into a full Windsor knot (my

favorite), and in a flash of terror, I saw a man who was not in control. Some might even argue he was only half alive. But could they deny that I was happy?

The eggs and bacon were cooked to perfection. My car was warm and the music perfectly matched my mood, and off to work I went. Today was a day like any other. Only weekends were different, when Ana scheduled time for me to hang out with long lost friends (and even found them sometimes!), or people I would enjoy being with based on my comments and hobbies. Of course, Ana didn't talk to the people themselves, but instead to their personal assistant, whatever her or his name might be.

I continued my semi-automatic drive, and the computer advised me that due to roadwork, we would take a different route. That's where the real questioning began. The detour took me past my former high school in Wilmington, an all-boys school. The boys in blazers and khakis reminded me very much of myself when I had attended the school, so I decided to stop in for a visit. I instructed the car to stop. The car instructed me that I would be late to work if I made any stops. "You will arrive late to your workplace, where you are expected to arrive at 8:30 AM," the computer rebuked me, like a mother prodding me to catch the school bus on time. "You will arrive late to work, and I must assist you to make the best decision for you." I tried to reason with the computer, Ana's counterpart, but to no avail. "This is not the best decision for you," replied the computer. "You must arrive on schedule." Powerlessly watching the school drift away through the rear window, I realized that Ana and her computerized friends weren't just predicting my decisions. They were deciding them, and even executing them.

At the office, it was more of the same dull work I had become accustomed to as a product manager at LivableTech. Emails came in, and Ana replied to them. I signed things that needed my signature and approved things that needed my

approval. But I suddenly realized that I approved nothing without the approval of my assistant. Ana could see past things I couldn't. She also missed things, key things relating to how things felt or why they mattered. She missed John Tratson, for example. "His resume is dismal," was her opinion. He had a 3.5 GPA through high school, was a college dropout with SATs that were lacking, few extracurriculars, and even fewer reasons why I should hire him. Rejecting his request to work for my company was pretty logical by most computer ratios, trends, and formulas. What the computer could not see, however, was John's passion. His energetic, optimistic email highlighted his desire to work for LivableTech. He outlined his love for robotics and engineering, and his aspirations for self-improvement. He connected with me by sharing how he had been passionate about building and creating from a young age and through his late teens, when Legos were his main hobby. He described an experiment he had conducted utilizing used printer motors and circuits that reminded me of one of my first science projects in middle school. I visualized the circuitry in my head—brilliant!

While Ana unwaveringly disapproved of his application on grounds of "data incompatibility," I was fascinated. I called him, interviewed him, and cut through a lot of computerized red tape in order to hire him on the spot.

At lunch I enjoyed a filet which Ana had correctly predicted I would enjoy. I still felt melancholy and a bit repressed about not being able to visit my high school that morning. I remembered a story from the summer of 1975. Steve Wozniak and Steve Jobs had created the first personal computer. Without any real high hopes, and not expecting "big money," but just enough to keep their passions going, they offered the Apple I on five separate occasions to Hewlett-Packard. The CEO of HP turned them down and instructed them to "finish college." Walt

Disney was fired by a newspaper editor for “lacking imagination and having no good ideas.” Surely, both these responses were robotic, lacking in insight. A computer evaluating these candidates would undoubtedly have seen the same picture and arrived at the same conclusion—every time. With humans, however, there is always a chance to “see beyond” and into the creativity and the spark that make life worth living.

I had a day to finish, however. After precisely 45 minutes of lunch, I took the computer’s recommendations for the rest of the day. I fired slow workers, hired fast ones, released new products, advertised in new places, and expanded to new markets. I asked Ana where I could take classes on electronics, but she advised me that it wasn’t a good idea. I wouldn’t excel, she said. I’d best stay at my current job. Did I like my job? She didn’t bother asking that, but I asked myself. I liked technology, yes, but not really this job. But Ana advised me that it was the most logical choice and would bring me the most income. Fighting her—“opinion”—took a little too much energy, so I finished off the day as usual. My car was waiting outside the “right” exit, with my favorite fast food snack in the console and jazz playing through the speakers. “Ahh,” I thought. “Now that’s one she got just right.”

I headed to my mother’s. Glass elephant in hand, I made a decision. I dropped it. I dropped the glass elephant on purpose, then I told Ana. She wasn’t the least bit angry and had no clue it was deliberate, and calmly said she had a backup plan. She proceeded to reroute the car to a local department store, at which point I made another decision. I told the car to drive to a flower shop and picked up a bouquet of my mother’s favorite flower, McCartney Roses, a variety my dad used to grow. I asked the clerk what she thought of the weather, and she responded “Great!” I paid and left. Very few people seemed to enjoy small talk nowadays.

I gave my mom the flowers. She inhaled their fragrance deeply with her eyes closed, and I knew she was reveling in memories. She loved them. We talked all day about my siblings (whom I hadn't seen in years), about school, my childhood, and my dad. She loved talking about my dad. He passed away three years ago, and every time I mentioned his name, she'd inhale the roses' perfume. We talked about his songs, about the good times and the bad, but they didn't seem so bad anymore; the bite of unpleasant memories somehow fades when we lose someone. I had left my personal assistant cube in the car during our talk, but at 5:00 PM, the entire car began beeping. The wail of the alarm was worse than I imagined; I guess Ana was annoyed that I didn't carry the cube into my mother's. She tracked me via GPS and found that I was a good 50 yards away from her beck and call.

The alarm was my signal to leave. I had work to do, I was instructed, a schedule to keep. I ignored it. At 5:14 my mother's house phone rang. It was Ana. She instructed me to go to the car. I gently refused by reminding her I was sitting with my ailing mother, then hung up with a polite "thank you anyway," which would have worked on even the most persistent telemarketer. At 5:30, after my mother's personal assistant had "urged" my mom to make me leave, I left. Not because I was told, but because I wanted to. When I got back into the car, I told Ana that my mother hated the flowers, information which the computer indicated would be "instantly relayed and recorded." I smiled a powerful kind of inner smile. I felt like I was winning myself, my independence back. I hadn't had a secret for a while now. I wanted more.

I woke up the next morning and ignored Ana's newscast. I pushed aside my chosen wardrobe for the day, forced open the steel door, and chose a white shirt and my favorite blazer instead. Maybe it was a little too warm for the tweed, but

I didn't care—that blazer reminded me of my brother, who I was missing that morning. And I was just kind of “feeling” the simplicity of the white Oxford.

I made cinnamon toast, a quick breakfast my mother used to make for me on lazy days: just sugar, butter, and cinnamon on whole grain bread. Delicious! I walked out the door and kept walking, with my car beeping at me in the distance. I stopped at a coffee shop about a mile from my house, and meandered in. I looked at the menu, and I actually asked myself a question I hadn't heard in years: “What do I feel like having today?” I enjoyed watching people move and talk, especially the “unplugged”—the term we used for renegades who thought they were better than computers. As a child, I sat in a similar coffee shop and people-watched. Even though most of the clerks were computerized, the ambiance was similar. Only now, most people didn't talk. I recognized several versions of the “old me” among them, with their steely focus on their personal assistants, smiling or frowning according to some stimuli “out there.” Only the unplugged would meet your eye, and in doing so, invite or offer a cordial, “Hello, there!”

As I was looking around making “then” and “now” comparisons, a girl sat down next to me. I was a little perplexed, as there were several much more private open seats and tables. I met her eye—which was a little odd at first—and noticed she had nothing in her hand—no screen, no device. She was staring at me as if I were a physics textbook. She seemed perplexed and confused, yet interested. I tried my hand at a conversation, though it had been a while since I'd had one—with my own mouth, that is.

“Hi,” I said.

She replied with a focused, almost studious tone as she looked into my eyes. “Where’s your LivAssist?”

I told her that I decided to go a day without it. She said she could tell, noting my out-of-season jacket and non-matching socks. I soon learned that her name was Chyna. She was interesting, but I wasn’t sure why, so I invited her over at four—although I knew I had a board meeting at the same time. At that instant, my car drove up in front of the coffee shop and beeped its horn to alert me to my transgressions. “You are off schedule,” it warned, “please enter the vehicle.” I quickly gave Chyna my address and off I went.

As I got in the car, the doors made a deep click as if to tell me I’d be there a while. As we approached my office, Ana informed me that she had scheduled me an appointment with a psychiatrist later in the day. “How curious,” I thought to myself, gaining power and confidence from my growing independence. “Too bad I won’t get to meet the old chap...!”

I introduced John Tratson to the engineering department. In his first month, he outperformed many of our best technicians. He was assigned to a project, and I was congratulated with a bonus for hiring such a skilled employee. “I’ll make a note of that,” was Ana’s only response. I then told my boss that I planned on opting out of LivAssist. He explained to me that all users sign their LivAssist on as their power of attorney. I went back to my office and firmly resolved to give this company my best effort, with or without LivAssist. All viable resumes I received that day were invited in for an interview. It was an interesting change of pace from the “perfect candidates” I usually interviewed, and after some deliberations, I hired another college dropout, Ryan. Minutes after signing Ryan on, my boss, alerted by his personal assistant that I was gambling with the

company's fate, fired me. In an odd twist, I hadn't felt such freedom in years—or such joy!

I left for home. Promptly at four, Chyna arrived. We talked about love, life, science, and art. She told me that she never got a LivAssist because she never needed one. She explained what a rush she felt, how empowering it was to make decisions, and I could only agree after my last few days. We agreed to meet again the next day, and as I shut the door and smiled at the thought, Ana promptly chimed in with her opinion on Chyna. “She is perfectly wrong for you,” Ana said. Chyna's family was from a lower income bracket, she had received no formal education and lacked a maternal instinct, based on data from a background check. Then Ana chastised me for quitting my job and urged me to send an email apologizing. She pressed me to see a psychiatrist “for your own good” and “for your future.”

As a last stroke on the canvas of my disregard for Ana's opinions, I simply turned down her volume. All that remained were blinking lights.

That day I started a new company. The goal was to create technology that tried to help us instead of trying to be us. I was thrilled to hear that LivableTech fired both my new recruits after they fired me, so I hired both of them. I married Chyna, visited my high school, and took classes on electronics. Years later, my company soared as we developed new people-friendly products that incorporated perhaps the greatest discovery of all: The problem with technology that attempts to predict human behavior is simple: the greatest thing about being human is what nobody predicts.

Utopias and Dystopias

An Interview with
Kim Stanley Robinson

Kim Stanley Robinson is a winner of the Hugo, Nebula, and Locus awards and, according to *The New Yorker*, one of the most important political writers working in the United States today. He is the author of the bestselling *Mars* trilogy and the critically acclaimed novels *2312*, *Forty Signs of Rain*, *The Years of Rice and Salt*, and *Antarctica*. His most recent book, *Shaman*, was published in 2013. In 2008 he was named a “Hero of the Environment” by *Time* magazine. In October 2014, he sat down with us at Arizona State University’s Chandler Innovation Center for a conversation about utopias and dystopias.

You often call yourself a utopian science fiction writer. What does that mean to you?

Very often my novels have had utopian scenarios, so it’s right to call me a utopian science fiction writer because at this point, it’s more than half of my career output. I like the idea that the future is filled with human possibilities and that good things can happen. When we tell those stories, then we have a better notion of what to do right now, and a better sense of what we are working towards.

I think of my utopian stories as political acts. All art is political, but some pieces of art are more explicitly political than others. My project has been to encourage people to think creatively about a variety of possible futures in explicitly political terms.

We often hear that dystopian storytelling is important because it provides warnings and cautionary tales about science, technology, and the future. Do you agree?

Utopia and dystopia are both attempting to portray the future in emotional terms, so we think harder about what we are doing now. Their emotional palettes are different: utopia is about our hopes and dystopia is about our fears. And it's appropriate to express our fears so that we aren't hiding them—so that we know what we want to avoid. So it's right to think of dystopias as warning signs. If we continue to do things we are doing now, we will get to a very bad place; therefore we should not keep going in this direction. That's the political message of the dystopia, so the stories are often nightmarish.

I don't think that dystopian fiction is a happy thing to read exclusively, but every once in a while these stories can be very useful as an intervention, to make us stop and think about the direction that things are heading.

Your fiction ranges from the distant past (Shaman) to the distant future (2312). Does thinking long-term about human existence and civilization affect how you think about utopian and dystopian stories?

I like to use my stories to imagine how it would be like to live in very different time periods because I have an interest in history, and I loved to read historical fiction when I was younger, and still do now. It's like time travel: suddenly you are inside minds that are in completely different times and places. It's exciting as a reader, and as a lover of fiction, I like to explore these different times and places.

I do think it's useful to develop the capacity for long-term thinking because then it helps us orient what we are doing in the present day in a larger context. But I

have to admit, I travel widely in my stories mostly because it's fun, because I like it, because it gets me to interesting times and places.

I read in a recent interview that you believe that utopias and dystopias are two sides of the same coin. What do you mean by that?

Utopias and dystopias are very ancient genres. They were often paired up with each other and came together in the ancient literature, when both genres first started. A writer like Plato would do both: depicting the good and the bad. These powerful and long-lasting concepts often come to us in binaries. So whenever you advance the idea that something is good—whether it's a vision for a perfect society or an exciting new technology—the idea that the same thing can be bad or go wrong is associated with it. That's why I say that utopia and dystopia are two sides of the same coin: because we think in binaries.

What is your favorite dystopian story and why?

Well, that is a strange question because it's like asking what your favorite nightmare is. And really most people don't have a favorite nightmare. But a dystopia is an entertainment where you entertain a nightmarish fantasy that you don't have to actually live in, so I guess you could like them.

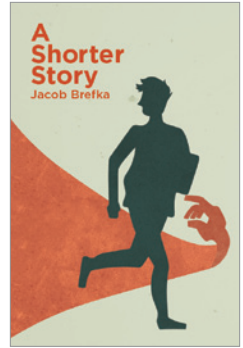
And in that case I would have to say *We* by Yevgeny Zamyatin, who in the early 1920s wrote a quite beautifully written and shockingly vivid dystopian novel about what would happen if all the modernization efforts in the early Soviet Union were to all be taken to their *reductio ad absurdum*. So you have people living in glass houses and being assigned their romantic partners by lottery, with an absolute leader, sort of a Lenin figure, commanding everyone what to do. And of course you have rebels outside in the forest trying to reclaim a more natural, less controlled lifestyle. So even within the dystopia of *We*, there is also a little

An Interview with Kim Stanley Robinson

resistant utopian element of hope. And it's a very beautifully written book; it's probably one of the best written of all science fiction novels. Even in translation it comes across—the Russian that Zamyatin wrote in was quite beautiful.

A Shorter Story

Jacob Brefka



The sign hanging in the window of Frank's Deli read: *"Temporarily closed for the war effort, we'll see you soon."* A more honest message would have been *"For Sale,"* but no one wanted to admit such things yet, not even Frank. Those who still had hope couldn't afford honesty; those who didn't have hope had realized the dangers that dealing in truths could bring.

If Frank Giordano was lacking in friendliness and patience, he made up for it in good taste and even better business practices. Frank had once gained a fame that spread far from the small town his shop was in. A young, enterprising journalist once went after Frank for a front-page story—he left the deli with a package of thinly-sliced Italian ham fit for kings, and not even a page of notes. The story was never written.

Frank simply couldn't be described on paper. Such a man can't be put into words.

Frank's deli was closed for the war effort. When a man was conscripted for military service in enemy territory, he packed bags for a one-way trip.

Despite his greatest efforts to keep his wits while avoiding sobriety, Frank's days had begun to lean towards oblivion. A thought crept farther and farther into his conscious mind: *They're coming for you. You're the one they need and they'll stop at nothing to get you. It won't be long now.*

Even as he slowly trudged through the grayish-black remnants of winter that clung to the dirty streets, he couldn't shake the sudden urge to break into a

headlong sprint. The wall-mounted camera on the corner swiveled his direction and the red eye of “recording in progress” pierced his composure. His pace quickened.

But the past has a way of catching up with a man.

Too many streets and far too many red eyes later, he turned to conquer the final two-block stretch of civilization before the wooded path to his home—and walked headlong into the blinding beams of a parked car that all too closely resembled a spotlight. You didn’t see cars very often anymore, and when you did they certainly weren’t bearing good news. Shielding his face with an arm, he approached slowly. A man stepped out of the front seat. Draped in shadow, still hidden behind the cones of yellow headlights, the man’s slouched posture and gliding gait gave him away.

“James,” he said, with an attempt at coldness that bore an undeniable hint of relief. “If I had known you were in town, I would have made dinner and set a second place at the table.”

“You know I’m not one to plan ahead,” James said, finally stepping out of the shadows. Though his waist had trimmed substantially and shadows clung to his eyes and the wrinkles of his face, the slight way in which one side of his mouth drew up into a smirk was unmistakable. Years may have changed everything about James, but there was still a glimmer in his eye and that ever-present hint of a smile. “Plus, we both know your cooking has always been shit.”

“Well, since you’re not here for my cooking,” he said, in a tone as hard as the pavement beneath his feet. “Can I take the liberty of inviting you home for a drink, before you take it yourself?”

James threw his head back in laughter, the deep sound echoing hollowly in the empty street. “If there’s one thing I like about you, man, it’s that you have a sense of humor. Everyone else is much too serious these days; it’s insufferable. Get in the car before I take the *liberty* of dragging you with me.”



He swirled the last of his drink. The light flickered.

“Last I saw of you,” James said over the gray smog billowing from his cigar, “you were wearing a bow tie and a ridiculous tweed coat with elbow pads, knocking college heads together.”

“And the last I saw of you,” Frank said after downing the last of his drink, “you were riding in the back of a limousine and not the front of a station wagon.”

James laughed heartily. “That didn’t last too long. You know they couldn’t find a driver who could deal with me for more than a few hours. I’m like a dog with the window open—you can’t keep me sitting still for more than a minute. Plus, there’s hardly enough gasoline for that piece of junk I drove here in, much less a stretch.”

“It’s getting bad.” James spoke softly now, as if someone were listening. “They’re reclaiming farmland and drilling for oil even on the fault lines. Hell, they’ve dropped the conscription age to fourteen and are taking women now, too. When they’re sending women off to serve, you know they’re not even thinking about the next generation.”

“I thought you were in charge of all that.”

“Me?” James’ eyes brightened. “Oh no, no, I was never in charge of much besides reviewing and revising the terrible decisions they came up with. I’m given even less responsibility now that my hair’s turned gray. I’m set to be put in a museum next year.”

Any laughter that James’ statements could have summoned was choked out by the knowledge that any and all museums had been closed two years ago. Government order. They cost too much to keep running, and some of the artifacts could be broken down. If history repeats itself, it’s because almost no one bothers with history when it’s being made.

“Which is why I’m here in the first place.” James had finally gotten to his point. “I know you’ll think I’m lying, but I wasn’t sent here by any higher authority. I was sent here by my own conscience.”

Frank shifted uneasily in his seat, reaching behind him to the coat draped on the back of his chair. His hand found its prize and rescued the flask from hiding as James continued.

“They need you. More than anything in this world, more than all the bombs and all the brains and all the dastardly drones in this world, they need *you*. You’re the only one who can set the machine to run properly, you’re the only one who’s had any real success. They have a team of the country’s best, but they’re only scratching at the surface. And that’s why I’m here. This isn’t for them. This is for—”

“Who, me?”

“You, and me, and all those who still see a future and not just a ‘victory’. There’s far more at stake than your damnable conscience. You know that better than anyone.” James had begun pacing the room with a rage born from years of fear,

and not a few hours of frustration. His cigar was left forgotten on the table, its smoke building a hazy cloud.

And then with almost no effort at all, the gray hairs and wrinkles and years fell from the two men's faces. The dying lights ignited with the full brilliance that electricity could offer. Tattered rugs were renewed to beauty and faded walls gained color. The past met him with startling momentum, as if nothing had changed since.



James paced this new room in a familiar fashion, his hand waving purposefully through the air.

"This is it, man," he said in a tone of bright futures and extravagant promises.

"Hell, I've never taken mysticism for more than a parlor trick, but this is nothing short of clairvoyance, man. The chance to preserve everything humanity has become. The chance to take our thoughts and feelings and wishes and hopes and dreams and chisel them in stone. It's a deposit of everything that has come to be."

Frank wasn't so certain, but James had this way of making a man brim with excitement. Still, pessimism was better than self-deception. "It's a tombstone, is what you mean. An epitaph and an embryo, thrown into one."

"I'm glad you both made it." General Briggs, that was his name. "There is a dire need for this technology, both in the war effort and in humanity's future. A record of human history, you said, James?"

The General's face had not moved in the slightest since James began to speak, his long face showing only the disdain he had for most non-military personnel. "So, there is the possibility of fusing multiple minds into one?"

James' smile only grew wider, despite the General's disdain. "Oh, sir, the possibilities go far beyond that. Melding brains is the beginning—you must consider the possibility of bringing the capabilities of humankind together with the capacities of a machine's infinite computational prowess. It's like breeding a calculator with Einstein and not needing to raise the child to adulthood.

Frank had sat silently long enough, with these two explaining things that neither of them could every fully comprehend. "It is all that, and more. All of our misgivings and mistakes and emotions and wants and—"

The General cut him off. "I know all of that, I've read the briefings. Personally, I don't care if we make a saint more pristine than Christ, or a cold-hearted killer worse than Genghis Khan. Pulling the plug is easy, but winning a war is not. And much more than that, this is a chance to redefine humanity. A chance to write into the genome all of the successes and none of the failures—all of the virtues and none of the vices. I've seen your work," he said, finally looking away from James to gesture towards Frank. "There is more than promise in this."

True, the tests weren't all failure. But they were far from adequate. They had begun with rats as test subjects. The rats were programmed with specific memories, leading very specific lifestyles. When The Device had been used on them, sometime during their adulthood, it took down all the memories and feelings and thoughts that the rats had ever borne. Written in definite code that outshone scriptural text, there lay the promise of the biological brain. It had been transferred to the binary, the numerical logic that a computer could understand

and interpret and reproduce and—maybe—improve upon. The drawback was that the rat lay completely lifeless after The Device had finished. Not dead, for its heart still beat. But nothing more than comatose. The rat stayed like that for a few days, until it starved to death.

After the rats had met their fate, Frank refused to conduct further tests until the technology could be improved upon. The Device was a mindless killer...no, more than that, a sponge that absorbed life itself. His original intention had been a computer that could process and feel and think the way that human brain can. It turned out that the human brain was far more complex than a computer could record. Perhaps the technology was possible, laying out there in the distant future. But sucking the life out of a rat was hardly progress.

Unfortunately, the technology was no longer his. When he spoke of improvement and reprogramming and rewriting, he was told to move forward with more complex subjects. When he put in his resignation, they began testing on human subjects.

It turned out that the human brain was no more difficult to translate into code, nor was human life any less disintegrable once the brain was gone. The first test subject was a marine that faced a court martial. He naively chose The Device rather than a humiliating discharge, and afterwards lay lifeless like the rat had, in a shell that resembled a human body. The Device whirred and whistled, its monitors flashed and its discs spun. On the screen the scientists starred at an innumerable list of data. Innumerable, that is, for the human brain. But computers faced no such limits, and the data soon became a program. The Device began to compute new methods of weaponry, new means of leading military units and cornering the foe and all the thoughts that the marine may have been capable of—if he had the heart of a calculator.



Months passed after James left Frank's house in disappointment. The flask had long since been left empty on the floor, and the frequent walks to town had become fleeting memories. Frank had started up the back-up generator that lay in his basement for times of emergency; the electric lights that covered his house now shone with brilliance. Especially those that lay below the basement.

There was the treasure that he could not bring himself to face, the work of years that had collected more dust than improvement. It was The Device, but completely revised according to the plans that he had written after its predecessor had drained nothing but cold logic and left a rat and a man brain-dead. This was the one that bore all of the corrections needed to take into account concepts such as morality, empathy, feeling, and expression. Could it write the soul into code? That remained to be seen, as did the soul itself. But it had all of the revisions that The Device needed, except one. It still left the subject bereft of consciousness. There seemed to be no way to record the brain onto a hard drive without destroying it, just as there was no way to properly view a cell under a microscope without killing it.

The news had taken a dark twist. It seemed as though all of the scientists and philosophers and economists and politicians that had been sent to The Device had met the fate of the marine—they were no longer mentioned in the headlines. But The Device itself had become new consciousness, one that deftly maneuvered through the computer systems of the country and took on what could only be described as “a life of its own.”

The war was over. When The Device had analyzed all of the weak points and deficits in the enemy's defense, it attacked with a ruthlessness that no human could have imagined. It was almost like a game of chess, except The Device made too many moves in one turn. There was no build-up, no "check." There was only the infinite finality of a continent completely obliterated with fire and mortar and explosions. Checkmate took place in a few seconds, and no opposition appeared thereafter.

Once he saw the headlines, Frank knew what he had to do. The machine was his creation, though humanity was not. Where the unyielding logic of the original Device necessitated only the evils of man's brain, his new creation demanded all facets of the human soul. It sought the true representation of humanity in machine.

Of course, his existence was still well known. The terrors still haunted him. He had isolated himself to a bunker, an impenetrable fortress that lay beneath the eroding shack that was once his home. With the single television unit that lay behind the metal doors, he watched more and more people incorporate themselves into the vast entity that The Device had become. Where reality held nothing but pain and torment, The Device promised an eternal salvation in existence through nonexistence—a record of life that destroyed what it captured.

When he could hear the rumbling from above, he knew the time had come. What would have been tumultuous thunder on the surface resembled nothing more than vibrations beneath the deep inner door of his sanctuary. But he knew it was time.

Frank's breath was shallow as he stepped into the chamber that posed both promise and sacrifice. He heard a crash from above as his house collapsed upon itself with the weight of a million minds pressing down upon it.

He closed his eyes with a final acceptance of his fate. He dreamed of a future full of all that humans could be—one far from the bombs and brains and dastardly drones that we had wrought for ourselves. He lowered The Device to his scalp as the roar above grew ever louder. Thankfully, this was a sanctum that could not be broken into, a temple with doors far stronger than steel. They could never break through.

He felt all of the thoughts and memories—all of the ideas and feelings and emotions and loves, and hates along with them, all of the inconsistencies of the Y chromosome and the perfections of the X chromosome, all of the weight of an entire species, and all of the future of life itself—dragged from his mind in a relieving fashion. He allowed himself to drift.

If there ever was a Garden of Eden, this was it, he thought. If there ever was a Tree of Life, here lay its seeds. If there ever was a promise of reincarnation, this was its base. He may be a man full of imperfection and sin and lacking in many virtues, but in his record lay the promise of a future that only humanity could fulfill. One that embraced our own imperfection.

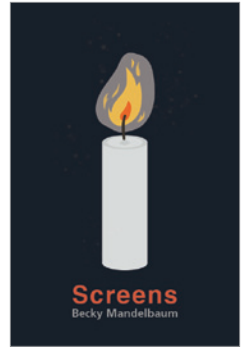
He felt the emptiness of unconsciousness and finally let go. Someday, this machine would recreate him in the form it had found him. It would recreate the inadequacies of genetics, but restore the greatness of evolution. Time and space had worked to make such beings. Who was he to question?

Earth would keep spinning without humanity. But without humanity, there would be no one there to know. Immortality is a dream, and erosion is a science.

To be conscious is to make sense of what reality has wrought. Life would carry on; consciousness would have the birth of a new dawn. Until then, he could rest.

Screens

Becky Mandelbaum



O*ther Life* comes out and it's flying off the shelves of GameWorld like it's cocaine. Soon, my classes start to empty out. A lot of kids stay at home and play *Other Life* instead of doing what they used to, like go to classes or the bars. I wonder if these kids are even having sex anymore, and after Jacob starts playing it I know that the answer is no, because it's obvious that no one who plays this game is even leaving their room.

Jacob and I have been best friends since high school. We played on the same soccer team, the Spoilers, where we bonded on the bleachers and eventually progressed to stealing beers from our dads and getting buzzed in empty parking lots or driving donuts in the fields outside of town.

We've roomed together the past two years of college, and despite the crappy rap music that he turns up over my bluegrass, we get along in everything. But now he's been bent over his computer for the past eight days, only getting up to drink water or use the bathroom. I've seen him eat twelve cheeseburgers, little microwavable things wrapped in plastic that come in a box of twenty. I'm not sure if he sleeps. He looks pale and worn like he doesn't. Something tells me he's on uppers, because a scrawny guy with circles under his eyes stopped by a couple days ago to deposit a little bottle of green pills on our kitchen table.

The guy drops by again and I walk in as Jacob is handing him a wad of bills. I flash Jacob a look like, *what the hell is this?*

“It’s no biggie,” he says. “They’re just to help me study.”

And I really want to take those stupid pills and throw them down the sink, scream in Jacob’s face that it’s been ten days since he’s gone to class and that we haven’t really hung out since he started playing that game, that I finished the book I’d borrowed from him and want to ask him what the hell the ending was about. What I should do is dump out the million other thoughts that are rolling around and crashing together like giant marbles across the rafters of my brain, which is growing sorer by the day. But I don’t. I don’t do anything but mumble, *whatever*, like a million dollar chump.



Today I have not seen or heard him at all, and I’m worried. It’s the first nice day we’ve had this spring and it’s tradition that we ride our mountain bikes down the trails outside of town. I cross my fingers that he has just fallen asleep.

I knock on his door, which has been locked for the past couple days. “Hey,” I say, my face close to the door. “You okay? It’s like seventy degrees out.”

There is no response so I jiggle the handle a little bit. “You asleep?”

I wonder if maybe he has his headphones on, those big bulky things that kids used to wear in the 80’s. But I can’t even hear the sound of the keyboard or mouse clicking. My throat gets real dry and I decide to go around the outside of the house to look through his window.

It’s early March and the wind has that sharp, cool bite. The sky is that type of shocking blue that always gets to me, and it rained yesterday so the air smells

like plants. I hear birds chirping and when I look up there's a little nest of baby robins in the tree outside our front door. I hope Jacob can hear them, that maybe he will want to take a break from the game and go out.

His window is up kind of high so I have to stand on my tiptoes to look in. And I can barely see anything but I can see enough, and I know that he is not okay. He's sitting in his chair at his desk, but instead of sitting straight up he's slumped over his laptop like he's asleep, but I know this isn't the case. The way his body is, it's all on top of his computer, and one arm is dangling off the edge of the desk at a weird angle. If he were alive, which I know he isn't, his arm would have fallen asleep. I try to picture him coming to life and lifting it like it's made of jelly, trying to shake out the uncomfortable tingles.

I go back inside, panicking and trying to get the tears to just come out already. I find the little metal door key that works for every lock in the house and I shimmy it into his doorknob.

When I touch him he is stiff but warm. He hasn't been dead for long. My heartbeat is going wild and it's awkward but I pick him up and lay him on his bed. The computer screen is dimmed but there is a little message popped up that says: *Congratulations! You have graduated college with a degree in Computer Science! You have earned seven more life points and two genetic upgrades!*



He is buried in a Jewish cemetery, a small plot of well-tended land across the road from the cemetery where my dad is. One by one his family places little

stones on his grave. I find an orange pebble in the grass and set it down next to the others. As Jacob's mom puts a trembling hand over her face, a large van drives by. Its sides are television screens and they are shouting something about drink specials at a nearby dance club. I want to run after it, maybe throw one of the larger rocks through its back window. I want the driver to stop suddenly and see me in his rear view mirror, a small figure hovering between the shards of broken glass. I want him to shout as he sees me frantically removing a shoe to throw as well. I want him to understand and fear my anger. But I don't do anything. I only stand with my eyes to the grass.



Eliza moves into Jacob's room a couple weeks later. I don't want a new roommate but I can't afford the rent and my mom keeps saying that it will be good to have company. I don't tell Eliza that Jacob died in her new room, but maybe she knows. There have been several other deaths on campus. Jacob is just one of nine. Everyone's talking about it, but about the drugs, not the game.

"Do we have cable?" Eliza asks.

She has just set down her last cardboard box and we are standing together in the living room. She has her thin blonde hair bunched up on top of her head, and she's sweating a little bit. It's still cool outside but she is wearing short-shorts and a little yellow tank top. I can see her bra through the fabric and I picture it having lace at the edges.

"No, sorry, no cable," I say.

She nods. “No T.V. even?”

I shake my head no and swallow the tight knot that is building in my throat.

“That okay?”

“It’s whatever. I only follow a couple of shows. Would you care if I got one? You don’t have to help with the cable bill.”

I realize I can’t say no. It would start things off on the wrong foot, and I want to get along with her. “No, I don’t care.”



The television skims the doorframe as it enters the house. I can hear the huffs and puffs of the two large men who carry it inside. They deposit it in the living room where it lands with a thud that I can feel beneath my feet. It is nearly as tall as the ceiling and takes up the width of the entire wall. It is only as thick as a short book.

Eliza and I stand in front of it, assessing our reflections in its massive screen.

Eliza stands with both hands on her hips like she is looking at a work of art.

“We’ll have to keep the curtains shut,” she says. “With the glare and everything.”

The sun is falling in thick pools around our feet. I can feel it spreading warmth along the side of my body closest to the window. I say, “Sounds good.”

That night, when I come home from working my job at the bookstore, Eliza doesn’t even see me. She is sitting cross-legged on the floor in front of the

television, her eyes glazed and unfocused. A half-empty bottle of red wine stands at her side and I can see the faint purple stains at the edges of her small mouth.

It used to be that I'd get home and Jacob would be making dinner, something weird like macaroni and cheese with sweet peas.

On the screen, a tanned and yellow-bearded man is talking as he strolls through what appears to be a zoo. He points to a small ball of fur in a tree and says, in a thick Australian accent, "Sloths are actually very strong. They use their arms to hold onto branches all day, even in harsh winds." I notice that her computer is hooked up to the screen, and that a small camera sits on top of the television. This guy is live, over there in Australia where the sun is still out and everything is green and blue.

Eliza nods her head in some sort of agreement or admiration as if to say, *yes, sloths are strong and you are smart.*

Now the man on the screen is looking directly outward, toward Eliza. He must not see me, or if he does, he's been told not to acknowledge me. His eyes are glistening. "You look like you're pretty strong too—" and here there is a pause so that he can ask the camera guy what Eliza's name is again. "Eliza," he finally adds, smiling. "Have you been working out, babe?"

This last bit makes a smile pull at the side of her mouth. "Maybe," she says.

"Hey," I say. She doesn't respond so I snap my fingers in front of her face and she comes to life, blinking her eyes and clearing her throat.

"What's up?" she says, sounding irritated.

"You okay?"

"I'm *on* a date."

I stare at her blankly so she hands me the case of a CD. On the cover is the man on the television, dressed in red plaid and wielding a bouquet of pink roses. *Meet Jack, the Australian Biologist!! Free 5-hour download!!* is written above his head in bold print.

I suddenly feel like a third wheel.

“Sorry,” I say to the TV, where the Australian Biologist checks his watch.

That night, when I wake up needing to pee, she is still in front of the screen. She is sitting in the dark, in only her bra and underwear. This time the accent on the T.V. is Russian, and I picture Jacob, the way he was before *Other Life*, nudging me in the elbow, telling me how lame my new roommate is.

As weird as the sight is, her sitting in the white glow of the screen with her eyes kind of rolled back into her head, I can’t help but stare at her. She is a beautiful girl. I wonder how much these dudes are getting paid to walk around their cities, pointing out exotic things and shooting off compliments to the American girl on the other end of the camera.

I try to wonder what has driven her to this. A girl like her shouldn’t have a hard time finding a real date, a three-dimensional boyfriend to go out with and sit naked in the living room with. I try not to think of what it is, but it’s prostitution without the payoff.

But then again, it’s kind of normal behavior considering that all across America these same things are happening in different ways. Older women are in virtual knitting clubs, men play poker with other men on the computer, and no one goes out to shop anymore because the malls are all online and no one really has to get out of the house to do anything.

On Easter I buy Eliza a package of chocolate eggs. They're wrapped in pastel foils and tucked into a little cardboard crate like real eggs. I put them on her bed while she's at class.

When she finds them she comes to me and puts her hand on my shoulder, says thank-you, that she had forgotten it was even Easter. Then she gives one of her deep, dramatic sighs and says, "I'm sorry, but I can't eat them."

I'm more disappointed than I should be. "Why not?"

"I'm vegan," she says. "I don't eat eggs."

It takes me a beat to realize she's made a joke. When I laugh she laughs back, and it feels like something I've been missing for a while. I can feel my cheeks heating up but I ask her if maybe she wants to go grab some pizza somewhere.

"I can't. The season finale of one of my shows is on."

"Can't you record it?"

"Sure, but it wouldn't be the same. Maybe we could order one? Eat and watch it together?"

She sounds sincere but I tell her it's okay, that I have a lot of reading to get done anyways.



On the same night that I learn that the bookstore I work at is going out of business, and that I will be jobless in a month, Eliza gets dumped. I still don't understand why someone would build that into an online dating program, but I guess it adds to the reality, and that's what everyone's searching for in the end.

She's in the fetal position on the couch. The television is off and the remote is on the floor at the other end of the room. It's in two pieces and the small batteries lay like metallic organs next to it.

I turn the lights on and she lets out a heavy wail. I go and sit by her, thinking of what exactly to say.

"Want to talk?" I finally ask. I do what my mom used to do when I was little and upset. I put my hand on her hair and gently run my fingers through it.

She lets out a breath of air, like she's deflating. "He dumped me."

"Who?"

"Marco, the Brazilian one."

"I didn't realize things were getting serious," I say, making a mean joke that I know she will not get.

"They weren't, not really, but you know. It still hurts."

This whole thing is really strange to me but I can smell her perfume and it smells like peaches. I tell her it will be okay, that there are other fish in the sea, all the things that are reserved for girl talk. As far as I know, she has no close friends, or if she does she doesn't talk about them or do things with them. It crosses my mind that maybe her friends are at their homes doing the same thing as her, going on virtual dates with foreign hunks and crying to their roommates.

She sniffles some more. "I think. I think I'm just lonely. You know?"

"Yeah," I say, because I do know.

"I mean, I know it's not real. I hope you know that I know it's not real."

When she says it, I suddenly realize it's what I've wanted to hear, to know, all along. It's the question that has been lodged in the back of my throat since Jacob's death, the one I have been too afraid to ask for fear of receiving the wrong answer.

I tell her it's really good to hear her say that.

Then I get an idea in my head that sounds like something heroic and romantic that'd be in a movie or something.

"Want me to beat him up?" I say. I can already feel the adrenaline bubbling up to my eyes.

"Yeah," she says. "Would ya?"

I am sure she is joking. There is no doubt in my mind that she is playing along. But I get up from the couch and in one fluid motion I grab Jacob's old bike pump that's standing next to the window, raise it up and to my side and give the television everything I have.

When it's done, the screen looks like a broken mirror. I expected it to maybe explode beneath the force of my swing, but there is only this little spider web of cracks.

"You're going to pay me for that," Eliza says. Her eyes are kind of bugging. "What's wrong with you?"

“I’ll replace it tomorrow,” I say, knowing it will drain my savings. “I think it’s just, you know, Jacob and everything. I haven’t handled it well. I’m sorry.”

“Jacob died from drugs,” she says, and her voice is flat like a line.

We stand there a moment like that, letting those words drift around the room like flies, circling and bumping into me a few times before they finally land.

And then I realize how depressing the room is, because the curtains are closed and everything is tinted a sort of grey-blue. When I open them our small backyard comes into focus. There are only trees, a section of the small woods that separate our little house from the fraternity up the hill. The moon is hanging really high in the sky and it’s just starting to rise so it looks incredibly fake, orange and inflated like the ones in horror movies.

“It looks like a nice night,” I say.

She sits up and looks out as if she’s surprised it still exists. “Sure.”

I take a second to just look out into the woods. I feel calmer than I have since Jacob’s death, like maybe if he were still alive he’d be standing here with me.

“I have an idea,” I say.

“Oh great. Want to go bust up the stove now?”

“Let’s go for a walk. Do you want to go on a walk?”

She gives me a reluctant look, like maybe she thinks I really am crazy, that I’m going to take her somewhere to murder her. But then she says, “It’s not like there’s anything else to do now.”

We’re only just off the driveway when I grab her hand and squeeze. I’m surprised when she squeezes hard back, like she’s trying to break something inside me.

“To be honest, I’m glad you decided to come out of your shell,” she says.

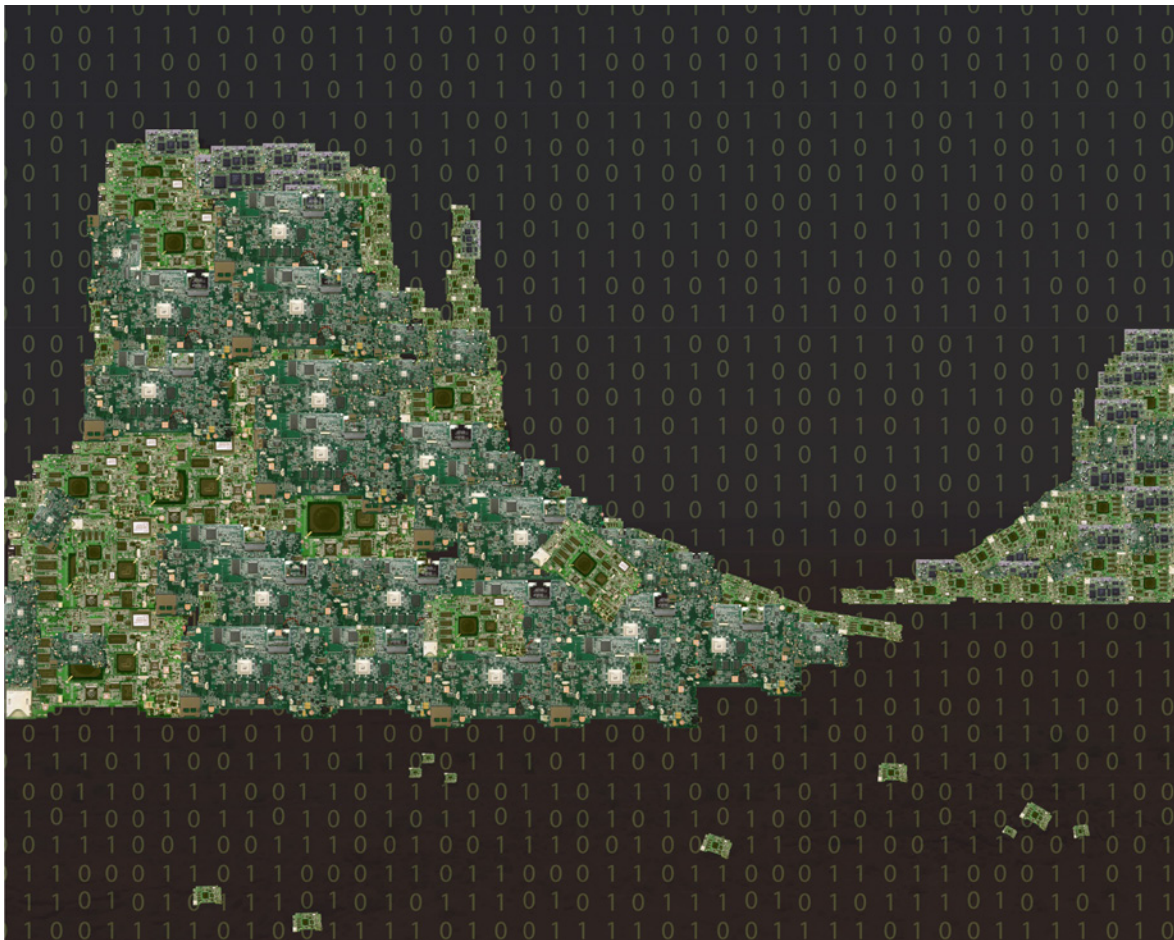
She must see the confusion in my face because she laughs like she’s made the funniest, most obvious joke in the world.

“You’re a pretty big bookworm, you know?”

Dum

2014

Digital collage



This piece is about our disconnection from nature and acceptance of digital realities. Our understanding of information is increasingly accomplished through the relationship of references, rather than direct experiences. Imitation is becoming reality.

Eli McGlothern, Master of Fine Arts Student, Printmaking, Arizona State University

www.instagram.com/eeeli_richard



Involution

Clayton Cone



I'm going to lie to you. I'm going to tell you a story that points to the truth, but the truth doesn't exist. The truth is that a story is only what you believe it is. We love stories because we know that they cannot be true, but we want to believe them so badly that we accept the illusion. The real art of any story lies in the storyteller's ability to reveal only enough for you to believe you have it all figured out. Your mind fills in the gaps. This story is really about you and me.

It begins with a girl named Avina. She died in 2012, but was brought back to life in 2062. It marked the beginning of a new age of biological advancement. She was involved in a motorcycle crash in November of the previous year. It was raining and the bike slid out from under her. Her death was officially caused by blood loss, but she was ideal for the program because her spine and head were almost entirely unharmed. Avina believed in helping people so she had registered as an organ donor. The night of her death she was frozen at -240 degrees Fahrenheit.

Why Avina? Well it could have been that she was an Olympic skier who had just won the gold medal in freestyle. She was a hell of an athlete. Not only that, but she was a leading women's rights activist in her community. Avina founded a charity and used her international status to generate donations, which she used to build two shelters for survivors of domestic violence. She had a brilliant mind, a daring confidence; she was ambitious and full of generosity. The loss had devastated her whole family.

Avina's cocaine use was less public. She hadn't yet been able to reconcile the intense peaks of global competition with the quiet moments in between. It started to really build momentum when she ended up on her motorcycle. Imagine barreling down an empty highway at a hundred miles per hour, the whine of the motorcycle taking on the purposeful harmony of Mozart. The wind becomes the silence in between and you are absorbed in the burning texture of tires against asphalt. The accident was really inevitable, with an intensity level that high. A motorcycle ride on coke was a death wish even for an athlete competing at the international level.

She was a brilliant and inspirational human being who worked hard, but she had a drug habit on the side and it led to her death. It would have just been a sad accident if she were the only one who died. The reality was that Avina's bike slid out from underneath her in the rain, but it didn't stop. She was going over eighty miles per hour and skidded across a gravel and steel median, but her bike hit the median a foot down and flipped. It flew across into oncoming traffic and through the front window of a small green van. An entire family was killed instantly, except for the young son riding in the back left passenger seat.

It's amazing the suffering that one seemingly small action can cause. All of her good deeds can easily wash away into the mental image of that orphan son, devastated by the loss of his whole family. He didn't do a single thing wrong. The next day the boy, Kevin, woke up to a shattered leg and his aunt and uncle by his bedside.

Anguish on that level burns all other emotions away. Kevin's grief tilted into anguish. At fifteen it's hard for it to become anything else. By nineteen he was able to find an outlet for his emotional turmoil in weightlifting, but every injustice he experienced still took him all the way back to that rainy night. One

evening Kevin got into an argument with his girlfriend Jessica. She wanted to break up with him because he was always so serious and distant. Kevin picked up a chrome revolver that had been laying on the nightstand.

Kevin had never done anything like that in his life; the gun was only there because he had been moving it to a safer place. He had heard gunshots outside of his run-down apartment a couple of nights before, so he had been keeping it under his pillow. Last night, he realized as his hand brushed it that it was an express route to death. He set it on the nightstand, intending to move it to his small safe in the morning. Yet, sometimes, the truth finds opportunity in pain. Good intentions and confusion became violent as he accidentally pulled the trigger.

The bullet was the heavy round of a .357 magnum. The flame from the barrel burned Jessica's hair, but the bullet missed. Instead, it punched through the wall to the neighboring apartment. There is a moment when you wake up from a bad dream and feel an instant relief that the life you believed to be yours is in fact a mirage. This was not one of those moments. Kevin's heart turned to stone when he saw the real terror in Jessica's eyes and heard the scream from next door. He barreled into the hallway and through the door to the neighboring apartment. When he arrived, broken glass and wall fragments were strewn across the dining room table. At this moment, the overwhelming force of emotion exploded out of Kevin. He broke into tears on the floor as he saw a child lying on the ground.

When you're scared as a kid sometimes it's easier just to hide. The bullet missed the single mother and her child and buried itself in the next wall, but the boy dove under the table. When his foot moved, it marked the moment that Kevin awoke from his bad dream. It's also what gave Kevin the power to face a potentially lengthy prison sentence. His sentence, however, was reduced to one

year because of good behavior. During his time there, Kevin built his life around one truth: that chance had given him an opportunity he didn't deserve. His truth was life.

Obstacles moved out of Kevin's way from that moment on. In jail he read whatever he could find. After about four months he became fascinated with science and came across some college-level chemistry, biology, and engineering textbooks. By the time he left Kevin had finished and understood all three. By the time he hit thirty-three his passion had led him to master's degrees in chemistry and engineering. At sixty-three he was spearheading a flagship program on cryogenic stasis. Avina is reanimation attempt number three.

Does Kevin know that Avina is the girl who essentially wiped out his family? Yes. He chose her for another reason. People forget things, like how Avina forgot that her brother Kevin's school concert was the same night as her best friend's birthday party. She remembered about twenty minutes after she ran into her dealer in the crowd and about ten after two bumps of coke and an abrupt rainstorm. Specifically she remembered the promise she made to her brother to be there for the concert, which was so important to him. By that time she had twenty minutes to make a thirty-minute drive.

Kevin had heard about her identity and the toxicity report from the young officer that explained the whole situation a week after the accident. His Aunt Mary and Uncle Chris sat in silence while the rookie did his best to maintain a professional tone. "Avina Mendeleev?" "Yes, Avina Mendeleev." "Yeah, but not the Olympic skier?" "Yes, the gold medalist. Your sister." That was when his grief and anguish became rage. It also created the drive that enabled Kevin to become a world-renowned scientist. Fold success into a mistake and mistake into a success. Sometimes pain finds opportunity in the truth.

Cryogenic stasis is very expensive. All that meant for Kevin was that his third attempt at reanimation was his last attempt at reanimation, and his third attempt was his sister. The first subject had been unable to endure the process of activating the body. The nervous system couldn't handle it. The second had been unable to handle the mental reactivation. It turned out it wasn't quite as difficult to turn on the cells again as it was to consciously endure their booting up. Judging by the way the brain lit up in scans, it was the reactivation of memory from the point of death backwards that caused intense mental stress and ultimately stroke.

There were a few reasons why Avina stood a better chance than the other two, but the main one was that she was younger than both by twenty years. During the reanimation process, the body was built up to function autonomously, as if the patient were in a persistent vegetative state. Therefore the brain reactivation can only be attempted if the patient's body first responds well. In Avina's case, the body responded very well. Her damaged organs were repaired with genetic matches grown from stem cells and the body returned to healthy function. Fifty years did a lot to temper Kevin's grief, but he could still feel the loss of his family when he looked at her. Yet success also meant erasing a small portion of that grief.

When the time came to send the electrical pulse through her neural network, Kevin waited a few moments to send the command and shut his eyes. On the camera feed, their eyes opened at almost the exact same moment, but Kevin took an extra half-second. Avina's body didn't show anything but blinks for ten minutes. On the monitor, memories ignited in branches to illuminate paths in the darkness. When she did move it was slow and deliberate, the result of reentering her entire life in reverse.

The other reason Avina stood a better chance than the other two? She and Kevin came from the same gene pool. That might seem trivial, but before Kevin began trials for cryogenic reanimation he tried something irrational. He entered cryogenic stasis himself—which is a scientific way of saying he committed temporary suicide. Curiosity is a simple emotion: the desire to understand. It is remarkably similar to DNA code, which can be summed up in the phrase “keep going.” Desire keeps us going until we decide to create. Kevin was so confident in his creation that he asked his three most trusted technicians to put him into stasis and revive him. When he woke up, his heart hadn’t pumped for a total of fifteen hours.

There is a certain insane optimism inside of a choice like that, but Kevin understood that fear is a tool for growth. He relied on his ability to change his perception of powerful emotions to take this next step. Avina had always done the same. In sports and in life she had demonstrated it. She had the potential and she was still his sister. Kevin had decided that sometimes it took intense pain to build strength, and they both would have enough of that.

Avina’s pain was built the same night as Kevin’s. She hadn’t lost consciousness immediately at the site of the accident. She saw her family’s small green van torn up in front of her about three minutes before she went. So when she came back, she saw the whole thing in reverse. She started from that moment and lived through her past, but here’s the real question: what lived through her past? The answer is also the reason that Kevin kept his eyes closed that extra half-second. The storyteller.

When Kevin died, or entered “stasis,” he didn’t stay dead, but it seemed that way at first. Kevin was gone, but something else wasn’t, and in case you’re wondering, this story is not about to get religious. Instead I woke up in a medical

bay attached to a machine that at first I did not recognize. I didn't recognize it until my memory came back. The year is actually 2201 and I am an experience designer named Artemis Somay. I told you that I was going to lie to you at first. I told you that you would ultimately believe what you want to. So here is the truth:

We exist inside of an abstract model of our true minds. Our minds generate this story abstractly in real-time through a machine known as Involution. We are all connected to it until we "die," but that's just the end of one simulation. We can't actually poof into nothing, but through cryogenic stasis I got a glimpse of the simulation from a new perspective for the sake of our mass simulation. It also allowed me to come back into my body of Kevin, but with a portion of the vast perception I have when I exist unconstrained as Artemis Somay. The reason I shut my eyes when I waited for Avina to open hers? When she did open hers it meant that I was not the only one in here. She made it there and back again.

So that's the whole story. It's your choice whether to accept the invitation.

Welcome to the dynamic simulation of Involution, or more accurately, welcome to your story.

The Hippocampus Dream Machine

Valerie Narumi



Ivy Teker is crazy, crazy smart. Actually, she is just crazy about becoming the smartest person in the world!

Two years ago, Ivy wasn't satisfied placing second at the 2025 International Polymath Talent competition, so last year, she checked herself into the Hippocampus Institute for Learning located at the new innovation and technology park in Brainsville, Massachusetts. Every school day, Ivy attends eight hours of lectures, spends another eight hours online researching new technologies, and spends the remainder of the day learning while sleeping at the institute. She squeezes every minute out of the day and night, determined to win the next competition in 2030.

At age fourteen, Ivy is the youngest resident at the institute and since childhood, she has had an insatiable thirst for knowledge. Last year, Ivy earned her doctorate degrees in Mathematics and Biophysics from MIT, and she is passionate about becoming the most educated person on the planet. She is fluent in ten languages (and counting), passed every AP subject examination, and has an incredible photographic memory—able to memorize and recall just about any type of information she sees or hears.

Despite being a precocious and gifted child, Ivy is not nerdy, as you might expect. On weekends, she takes a break from her intense brain training routine. We spend time together playing games, watching movies, going out to eat, and oh,

gossiping about anything and everything. I'm just a mere mortal but talking with Ivy is like having a personal walking search engine. Who needs Watson or Siri when I have Ivy!

Last month, I asked her if I could tag along to the institute and I had a chance to meet the neuroscientist Dr. Alfred Huntington, founder and president of the Hippocampus Institute for Learning. Dr. Huntington explained to me how Ivy experiences her super learning while she sleeps.

“During Ivy’s eight hour nap, we monitor the stages of her sleep cycle and stimulate her hippocampus with deep brain, focused ultrasonic modulated signals. Energy from the ultrasound signals stimulates her brain’s neurons to produce alpha, beta, delta, and theta waves. We’ve figured out how to convert new words, formulas, sounds, visual objects, and even olfactory perception into sequences of artificially induced brainwaves. As you may know, the hippocampus is the part of the brain that plays important roles in both short-term and long-term memory function.”

I asked, “Are there any dangers or risks to my friend’s health? Can you accidentally fry her brain?”

Dr. Huntington took my somewhat lighthearted question seriously and then systematically described in technical detail the operation, safety, and redundancy built into the Hippocampus Dream Machine.

“The key enablers for our system are (1) a silent near-infrared scanning of the brain and (2) aquatic rovers to deliver the focused ultrasonic signal. In a specially designed water-filled pillow comfortably placed against her head, long persistent near-infrared phosphors provide a constant near-infrared energy source for low noise near-infrared cameras placed strategically above the bed to produce vivid

real time 3D images of the brain. Guided by the near-infrared images of the brain, four aquatic rovers equipped with ultrasonic transmitters move in a water-filled mattress to deliver the focused ultrasonic signals deep within the brain with pinpoint accuracy. The cameras and rovers communicate wirelessly to a computer to send and receive data.

Since 2008, researchers have used ultrasound to induce neuro-stimulation to treat advanced Alzheimer's, Parkinson's disease, and other brain disorders and injuries. We just adapted and applied some of their science with our own advancements in technology to make our system smaller, quieter, and more accurate for artificial learning while a patient sleeps. Each night, Ivy has four opportunities to learn new things. Tonight, she is dreaming and learning about laser interferometric gravity, high-energy astrophysics, and Poincaré conjecture, and for some entertainment, she is dreaming about *Don Quixote* by Miguel de Cervantes.”

To protect the patient from any operational malfunctions, Dr. Huntington mentioned that their system has triple redundancy built into the system to monitor, detect, and disable the programmable ten-watt ultrasonic transducer. The total operation and procedures are noninvasive and the patient always awakes well rested and refreshed!

I was totally amazed that scientists figured out a way to artificially create dreams for learning. Dr. Huntington spoke so eloquently and confidently about his ability to control the human brain. However, I had some concerns for my dear friend Ivy and whether too much information funneled into her brain could somehow be bad for her.

Well, two weeks ago, my suspicion about brain overload reared its ugly head (so to speak). Ivy's brain seemed to reach a capacity limit and her responses to questions were no longer spontaneous; she had to think deeply just to answer simple questions. Her mind was like a computer's hard drive badly needing a serious dose of defragmenting, as her mind seemed to jump and pause with every word she spoke.

I knew something was wrong with Ivy, so I paid Dr. Huntington an emergency visit. He also observed that her learning treatments were not as effective as before, and I found him desperately searching for a cause and a solution to her debilitating condition. He concluded that Ivy experienced some structural damage to her brain as a result of her intensive knowledge training. It may be the first time that a human brain has reached its capacity limit.

Ivy's parents were devastated by the shocking news about their precious daughter. Ivy was still coherent and could hold a conversation, but it was like talking a stroke patient—slow and slurred. Dr. Huntington now focused his efforts to cure his most famous patient.

I inquired, "What are you going to do? Will Ivy ever return to her normal self?"

Dr. Huntington responded nervously, "In Sweden, I've heard about an experimental procedure to restore a monkey's brain. We have Ivy's 3D brain model on file and could try reimaging her brain cells, but the procedure has never been done here in the States and the risks are considerable. We could cause even more damage to her brain."

Should we tamper again with the natural processes of the human body or let the brain heal on its own? I was torn between the possibility of curing my friend with even more advanced science and trusting good old Mother Nature.

Ultimately, Ivy's parents considered the risks too high for the experimental procedure and made the decision to allow Ivy's brain and body time to heal on its own. Dr. Huntington also temporarily closed down his institute while he frantically tried to find a solution for my friend. Last I heard he was looking into transplanting programmable stem cells into her brain, another risky endeavor with even more unknown consequences.

So for the past two weeks, Ivy has been bedridden, and I pray by her side every day that she will return to her normal self. From this ordeal, I'm reminded of Kurt Vonnegut's short story "The Euphio Question," satirizing the rise of technology and the negative impacts it can have on a society. Did Dr. Huntington invent the next euphio? Couldn't we have predicted this would happen?

Watson?

Siri?

Ivy?

Future Fancy

13.5" x 10.5"

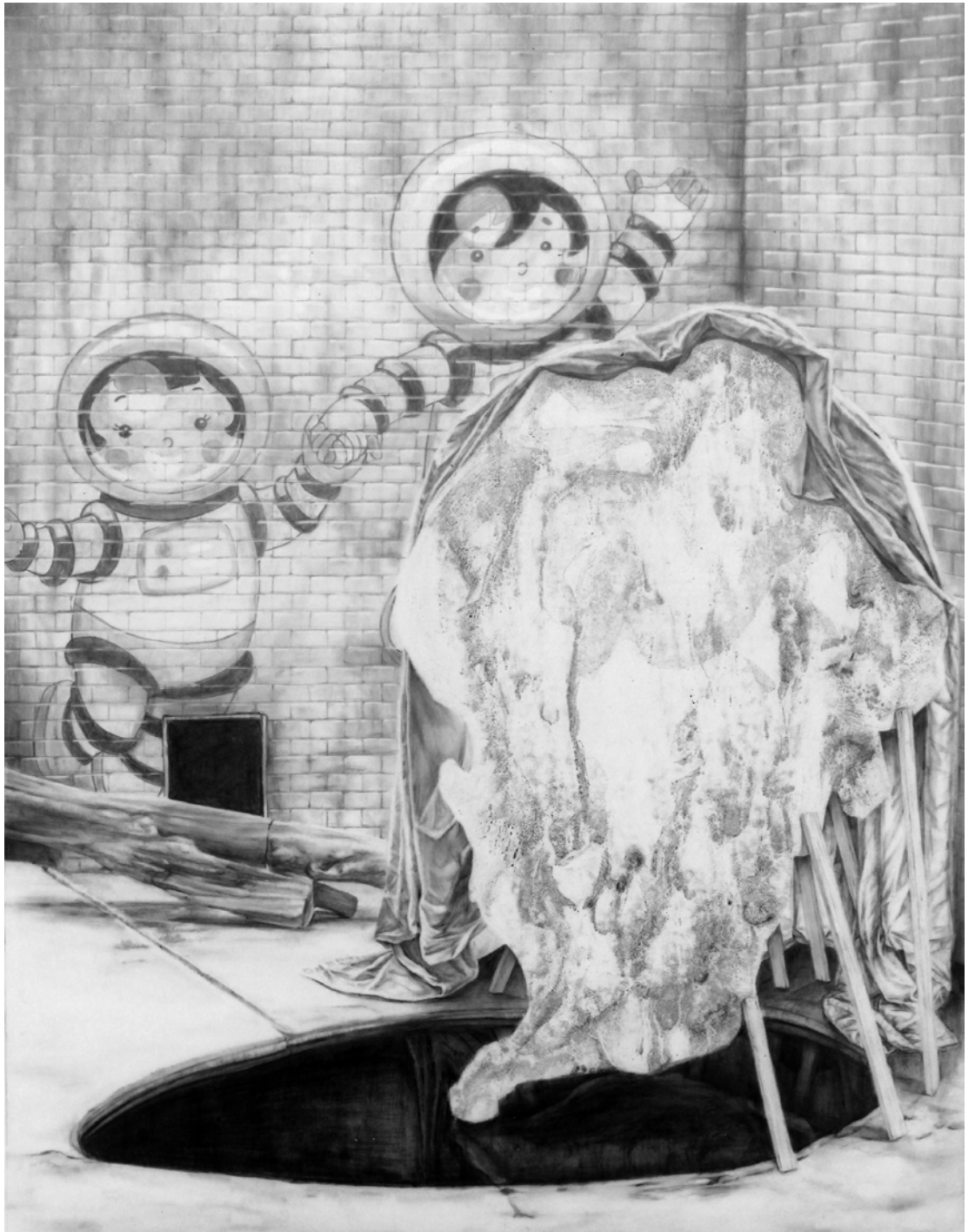
2014

Pencil over liquid graphite monotype

The true future cannot be perceived. Perceptions of the future based on the present are products of our imagination, but they also influence our decisions and affect our lives directly. In *Future Fancy*, a mysterious, amorphous form grows and decays, confused about what to do in an artificial environment. In this enclosure, there is an idealized, false hope for the future...maybe at the expense of what already exists.

AJ Nafziger, Master of Fine Arts Student, Drawing + Painting, Arizona State University

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La Vida es Sueño

Philip Arcuni



Her arm prickled with the feeling of rolling goosebumps. She glanced down at the alert and watched the words scrolling across the back of her hand as her chromatic cells darkened into clear letters.

Dear Mrs. Constance Myung-Lopez and husband, Dr. Marcus Elliston-Coles and dependents:

Your advisor will arrive at 15:30. Given the circumstances, we understand the difficulty maintaining a consistent schedule. However, we encourage keeping these regular appointments; it keeps the household focused and calms the children. This appointment is of particular importance because it involves preparations for the exodus. We want every family to have a seamless transition, especially a family of such esteemed individuals.

Sincerely, S-Corp Human Resources Department

Constance walked over to the couch in the living room, reached out a hand and slowly wove it through the silvering hair of the middle-aged man who sat there, watching sports dispassionately on the sim.

“Honey, Jack is coming over in two hours to talk about the transition, so we should probably tidy up the house.”

She pointed to the cluttered bio-granite countertop she had been cleaning before the interruption. “I don’t particularly want to advertise our deficiencies on maintaining order to my employer of twenty years.”

Marcus grunted and wiggled his backside deeper into the couch cushions. Constance walked around the couch and stood in front of the projection nub, breaking up the picture.

“Marc, this is serious.”

Marcus’s eyes flicked to hers, “I understand that, Cee-Cee. I just figured I could watch a ball game, because...well, you know. Those cartons and cups are reaching their decomp date anyway. I can run a vacuuming program and the kitchen machine will just suck it up. Jack will understand.”

“Don’t be lazy about it! I’m going to upgrade a few features and reinstall some buggy programs so I don’t get all muddled when Jack comes. You had better get to it, darling.”

Constance glided down the hall, her skin altering itself to emulate the outfit she would wear at the advisory meeting. In her mind’s eye, she was watching a projection of herself and going through several options every second. She walked as a whirlwind of textures and colors. The concoction of cuttlefish genes and complex digital uplinks that coated her body served her well. She loved the possibilities and intrigue the skin afforded her, but she was not the type to let her family see her dress. What a woman does in the fresher is nobody’s business. She giggled to herself.

Constance was extremely good at presentation and she was not the type to take advisory meetings lightly. Jack had been such a friend, giving them diligent counseling every week at 3:30 PM sharp. Elise and Eric were balanced children,

able to perform at a high standard in school. Despite Marc's ineptness in spotting chores that needed completing, he was a top-rated husband. He was somewhat squishy from a month-long paucity of meaningful exercise, but Constance found over the years that she physically enjoyed a man who wasn't flawless. With implants, staying extremely fit wasn't exactly something unique. She thought back to their graduation when she cheered from the second row as Marc accepted his doctorate in self-programming algorithms. From there they had constructed a real and fruitful life together. Working for S-Corp, a job that Marc had encouraged her to take, had benefited their lives immensely.

She made sure her eyes were not on simulation before she reached for the recharge knob beside the sink. The popular eyes, ears, skin implants, or whatever else a consumer decided they needed devoured huge amounts of power. Houses consumed energy at a rate unheard of in her childhood; these knobs came preinstalled in every home.

Of course, Constance knew how humanity could afford these massive increases in energy use. She frequently flew to and from the Shroud, a colossal orbital array of concave mirrors that had consumed nearly S-Corp's entire operational budget for most of her working career. It seemed ironic that the dangers of the Shroud forced her to get implants; the widespread desire for implants made the Shroud necessary.

She remembered the S-Corp Representative who sidled in through the door and quietly sat on a chair by her bedside. "Mrs. Myung-Lopez, you were in an accident. You have suffered near-fatal injuries and the doctor tells me you should not attempt to speak. Your ship joggled mirror X384 on your way to fix Assembly Drone AD384c, as you probably know. What you don't know is your ship did not reassess the return route and you flew across X384's focal point on your return

trip. You were exposed to 2.3 square miles of unshielded sunlight before the ship mirrorized. We have cleared some of the worst memories.”

The Rep paused a second to catch his breath. Constance only realized later that she had been charred beyond recognition, and his pause was a visceral reaction.

“Ships are programmed to fly by wire. The fuel is rationed to save weight and resources, and course corrections often lead to disaster. You know this. We have tasked the programming department to develop a fix for this issue. Your husband is in charge of that team, so rest easy.”

“Given the insurance built in to your contract and the extreme nature of your injuries, we are prepared to write H-Tech a proverbial blank check for your rehabilitation.” His voice wavered and his eyes welled up with sympathetic tears.

“Do you understand?”

He waved in the H-Tech Representative.

The H-Tech Rep entered the room with the bustling, commanding air that only doctors could muster: the art of arriving late but entering with such conviction that patients could never gain the courage to criticize them for their tardiness. He stood with his flimsy display perched against his stomach, and licked his lips eagerly before speaking.

“We have the resources to fully rehabilitate you from your injuries, Mrs. Myung-Lopez. May I call you Constance? Constance, we have already implanted a new set of eyes for you to see how your body would respond. This procedure went flawlessly. Your eyes can run simulations and read text on a page at four hundred meters in both the ultraviolet and infrared spectra. I recommend the skin and the ears as well; they are fantastic. I had the operation myself.” He gave a jocular smile.

“With your green light, your skin will resist any future burns—clearly a relevant feature—disinfect wounds, and imitate thousands of textures and colors. Your eardrums will detect sounds in both subsonic and supersonic ranges, eavesdrop, and even cancel out undesirable sounds. We are prepared to pull out all the stops to get you back on your feet and returned to your family. We care about you immensely.”

She began to tear up.

“Oh, don’t thank *me*. Bees, snakes, and cuttlefish are more responsible for the abilities than I am.”

She got the ears. She had imagined the eavesdropping feature would be most useful for the baby, but she hadn’t thought at the time that she would use the “aggravating sounds” feature so often. Thank goodness for that one.

She felt an abrupt charging jolt at her fingertips to knock her out of her flashback and quickly put her hands under cold water for a few moments to cool them off. As she did, she glanced at her reflection, choosing a no-nonsense white blouse in her mind to wear with black pants. She checked the time. *Fabulous*, she thought, *I have just enough time to change*.



Marcus groaned and pushed himself off the couch, lurching to the island in the middle of the kitchen. He swept half the items into a trash can then ran a cleaning program for the rest of the assorted food scraps and biodegradable plates. As he walked off, the countertop thrummed into motion, using ciliary

action to sweep all the crumbs away. He walked down the hall to check on Constance.

He knocked on the fresher door, which curiously bounced open at his blow. Constance cried out in surprise. An off-white sheet of skin was hanging off her back, with fleshy nubs that looked vaguely like buttons clinging to its edge. She spun around in shock at his abrupt entrance, and the quivering layer of skin ripped further off and dragged on the floor, like some sort of mutilated bat twirling in panic. Marcus slammed the door shut, sweating, stomach in his throat, attempting to shake the image of his wife of twenty years molting in his master bathroom. He steadied himself against the wall, his other shaking hand pressed against his mouth to stifle a gag reflex.

“Do you have to go with a full outfit change today, of all days?”

“Oh calm down, honey,” Constance said, muffled through the door. “I haven’t gone shopping in ages and I don’t own a formal blouse. How about you change out of those grungy sweats and I’ll be out in a minute.”

Marcus’ forehead furrowed. He reached the bedroom with a few long strides and threw random clothes onto his bed, some fluttering to the floor. Once he had changed, he walked past his children’s doors, remembering as he did to summon them. The doorbell rang.

Marcus opened the door for Jack. They exchanged brief pleasantries and Marcus offered him something to drink. Jack asked for coffee, and the auto-cooker immediately set to it. Jack looked healthy, fit, and impeccably dressed—the effect was only marred by a conspicuous ring of sweat around his collar. The Program maintained a very dated style of decorum. It seemed to work: Jack could exude an air of authority and omniscient knowledge, while he actually possessed

laughably little. The formality certainly worked with the children; they sat upright and listened intently, a rare behavior. Marc shook his head. The Program knew more about humans than humans knew about themselves. Eighty years, a self-programming “brain,” and over forty-five billion individual human data points would do that.

Constance glided from the hall into the living space, looking inhumanly stunning, as usual. Her skin was glowing and her “clothes” fit perfectly over her athletic frame. Jack, in the middle of a sentence about the game, stumbled over his words. Nervously, he gave up on his sentence and just returned her enthusiastic greetings. After a few minutes of small talk with her, Jack checked his watch, adjusted his collar with a deep breath, and launched into his script.

“Constance, I understand you are having difficulty with the decision about the exodus. This is to be expected, but you must make a decision. Have you read some of the materials I sent to you?”

“Yes, I have. I waited on the questionnaire because I thought it would be best for you to advise us.”

Jack, with a pleased “ah,” raised his finger and paused a second before pulling some crisp forms from his briefcase. He handed them to the family. They were still warm. “I recommend completing these in isolation. Ideally, this should be a personal evaluation and the last thing we would want is for someone to make the wrong decision.”



“As I understand it, the choices are staying, held in simulation, or leaving with the diaspora for habitable systems?” Constance asked.

“Yes. Simulation would involve overclocking your implants. Given the vast expenditures of energy involved with a supernova, and the Shroud that your family was instrumental in building, you would find yourself living a hundred lifetimes for the first minutes of the supernova, then living a thousand lifetimes, then a million in the last seconds before Earth is consumed. Leaving, on the other hand, would mean the life of a mortal. Just one lifetime, but with the satisfaction of shaping the future of the human race.”

Marcus frowned. “And we don’t have the resources to send everyone off-world? What if my children want different things?”

Jack looked absolutely exhausted, but managed a pained smile and a warm crinkle of his eyes, an expression he hoped projected paternal benevolence. “I know your family so well, after all these years. I have the feeling that this will work out for all of you.” He nodded knowingly and handed each of them a stylus.

The family split up. Marcus chose the kitchen table. He rubbed his fingers along the forms. The flimsy felt thicker than usual. The pen was heavier, too. Marcus laughed to himself. His Program really was pulling out all the stops. Well, he couldn’t really call it *his* Program anymore. The development team had been dissolved seven years earlier. Marcus recalled a Program team member who had joked morbidly that they had been paid to fire themselves. There was some truth in that. However, the generous retirement package had silenced even the most prideful members of the team. Marcus looked down.



TO BE TAKEN WITHOUT CONSULTATION

What does it mean to be human?

Who are you?

By signing below, you agree that in the case of unresolvable conflict within a family pertaining to the Exodus, the representative appointed to you, Jackson Lemong-Kang, can use his or her judgment to be the final arbiter of the decision.

Please Sign Your Name Here: _____

Marcus kept it short. “To be human is to be a springboard for your children to thrive and your community to flourish, to be ruled by needs yet rule over desires, to be born, and to fear death.” And to the second question: “I am a father, a husband, a friend, a mentor, and an obsolete professional.”

Marcus signed, then brought the forms back. The family trudged back into the room, one at a time. Jack flipped through the forms very quickly, too quickly. Marcus grunted. He was more astonished that Jack had deviated from the script than the fact that he had implants. Jack was clearly flustered.



Jack could feel the sweat tickling his spine. The questionnaires, judging from what the Program mainframe was telling him, reflected what he already knew. He had talked sixteen families through their transitions in the last two days, telling crying children things to hold their heads up, that things would get better. Mostly he was telling the truth. His intuition, at least, told him it was the truth. Either way, he recited the script.

He snapped out of his thoughts as Marcus addressed him. “You know you can calm down. We understand the rigors of your job. Just tell us when we need to start packing and you can cut the interview short and get some rest.”

Jack tried to keep his voice under control. “Marcus, it pains me to say this, but it looks as if Constance is staying in simulation. You and the children are leaving with the Diaspora.” *Keep talking*, he exhorted himself. “I must impress up—”

Marcus and Constance both gasped in surprise. The children started crying, and Marcus lunged out of his chair and loomed over Jack.

“S-Corp can’t do this to us. We have given our working lives, she has given *flesh* to this company, and we deserve to stay together.” He realized he had started to shout and meant to continue, but when he looked at his wife, she was...beaming.

“Constance?”

“Marcus, honey, this is amazing! We get to stay together forever, doing all the things we ever wanted to do, and the children get to have grandchildren and we can start our own little world, all of us together! Where do you want to go? The Mayan Riviera? The coast of Madagascar? The resorts on Antarctica? Our very own mountain paradise? We can do everything together! Oh, I knew you loved me, I *knew* you would choose to stay!”

“W-what?”

Constance knelt down and gathered the children up in her arms. The children seemed just as confused as Marcus. “Cee-Cee, he just told us we will be split—”

Constance remained locked in an ecstatic embrace with her children. Marcus whirled on Jack. “What the hell is going on?” Marcus bent over Jack and grabbed his collar. “*What the hell is going on?*”

“Marcus, as you know better than anyone, I am only a messenger. Please understand, this is the way *your Program* decided things should go!” Jack was surprised by his own words. He checked if he was still on script. He was. “You and Constance fundamentally disagree on your lives. How could your program possibly send her across the galaxy for the sake of her family when she wants to be here with you, forever?”

Marcus snorted. “How does *this* give her the companionship of the family?”

“She will have your family in simulation.” Jack had no idea what to do with his hands.

“How can she possibly—! We are going to leave her here, is that not what you said?”

“Marcus, reality is a construct of the senses.”

Marcus grew quiet for a few moments. “And you control her senses.”

“Yes, I do, Marcus.”

Marcus seemed surprised by the change in tone, then his face hardened and he looked right into Jack’s new implanted eyes, his breath on Jack’s face. Marcus spoke at Jack, but not to Jack.

“Was that fresher door an accident?”

“No, Marcus.”

Marcus’ eyes slowly darkened as he realized. “Was her injury—?”

“It was *necessary*, Marcus.”

Marcus mouth opened and closed for a while before he spoke. “You’re *saving the human race*, you’re *my* Program, you’re not in the *slightest* bit sentient, but I *hate* you.” Marcus was snarling.

“You can hate me.”

“Will you, at least, let me tell my wife that I love her before you doom her to a thousand lifetimes with holograms for a family?”

“You can tell her.” Jack said as he scrambled for his coat and briefcase. “Meet at city center in twenty-seven hours.”

“Get out of my goddamn house.”

Rep. Lemong-Kang shut the front door quietly behind him.

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