



TOMORROW PROJECT ANTHOLOGY

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THE FUTURE

Powered by Fiction

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Edited by
Ed Finn and G. Pascal Zachary

Intel Foundation
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Foreword: Listening to the Future

Brian David Johnson

What if I told you that the future could be found threaded through the words of this anthology? Would you believe it? Would you search through these stories and visions of tomorrow for a hint of what's to come? It's true. This collection not only contains the future: it was written by the people who will build it.

The Future: Powered by Fiction was an open call for visions of the future from young minds all over the world. In collaboration with Society for Science & the Public and Arizona State University's Center for Science and the Imagination, we challenged the authors to give us science based, fact based portraits of what's to come. The 10 winners were selected by an independent editorial board and each received \$1,000. The selected stories are published in this Tomorrow Project anthology.

The Tomorrow Project is an international project that uses science fiction based on science fact to spark conversations about the future. The project believes that everyone should be an active participant in their future and that science fiction based on science fact (aka science fiction prototypes) can give us a language to talk about those futures. We ask people to imagine both the future they want and the futures they want to avoid.

The call for entries closed on December 13, 2013 and the response was humbling. Our total submissions reached 274. These visions came from 15 countries and

36 U.S. states. One of the things that really made us happy was that 49% of the entries were from young women. For a long time now it's been a goal of ours to get more women involved in STEM. The stories came from a wide range of ages as well: 26% from 13-15 year olds, 45% from 16-18 year olds, and 29% from 19-25 year olds.

Another fact that delighted the editorial board was the quality of the submissions. The board was able to pick the 10 winners, but they felt that there were a large number of stories that should also be published by the Tomorrow Project and shared with the world. Bryan Walsh, a senior editor at *TIME* magazine and a member of the editorial board, said, "The stories I was fortunate enough to judge showed a wonderful imaginative sense, an ability to use fiction to explore the shape of our future."

Because of the overwhelming response to the stories, we decided to publish 33 additional stories along with the 10 winners. This meant we were faced with a really good problem to have. We had too many great stories for a single volume!

We decided to publish them in quarterly anthologies. This is the first of those anthologies, comprised of stories from the 10 winners along with a few extras. We'll follow that in fall 2014 with "Dark Futures," an exploration of the possible dangers of technology and futures we want to avoid. In winter 2014 we'll share "Living Tomorrow," featuring visions for the future of humans and the environment. Finally, in spring 2015 we'll finish with "Journeys Through Time and Space." All of the anthologies will be available for free online and in limited paperback form.

You can see all the winners and watch the awards announcement at:

<http://isef.tomorrow-projects.com/>

Foreword: Listening to the Future

Reading through this collection, I was struck with what science fiction and science fact can do together. They inspire young minds and get people excited about science and engineering, creativity and words, and ultimately shaping the future. Too often we can get so deep into our daily lives that we forget. It's really heartening and exciting to see that imagining possible futures can have such a powerful effect. Together we really can build an awesome future, and the young minds featured in this anthology are the ones that can lead the way.

I challenge you to see what futures you can find in these stories. You might discover a future you like or a future you want to avoid. You just might catch a glimpse of a future you want to start building today.

Brian David Johnson, Intel Futurist



Editors' Introduction

Ed Finn and
G. Pascal Zachary

The history of the future is a globe-spanning story: people have been imagining and achieving the impossible in spectacular ways from the early rockets of 11th century China to the elaborate cycles of Mayan astronomy. Many of the same tales reappear across cultures: explorers voyaging through space and time or discovering a cure for human mortality. Despite the incredible advances we have witnessed in the past few decades, many of the old questions are still unanswered: What makes us human? How can we thrive in a dangerous universe? What kind of world do we want to live in?

Little surprise, then, that in 2013 a truly global competition for stories about the future would generate such spectacular results. The young people aged 13-25 who contributed their work to *The Future: Powered by Fiction* hail from 15 countries and 36 states in the United States (plus Puerto Rico and the District of Columbia), bringing a wealth of diversity to their thinking about worlds to come. As a collaboration between the Society for Science and the Public (SSP), the Intel Foundation, and the Center for Science and the Imagination at Arizona State University, this project brings together three partners dedicated to expanding the global conversation about science and technology.

We hope this book can serve as a fictional complement to the astounding, and very real, research that SSP and Intel support through the Intel International Science and Engineering Fair. Each year Intel ISEF gathers over 1,500 of the world's most gifted young scientists and engineers to share their work on a

global stage. As these young people learn, the story you tell about your work is extremely important, not just to share your ideas with others but to understand them better yourself.

This is why the contest title argues that the future is powered by fiction. Coming up with a compelling story about the world as it might be is a crucial step in the process of real discovery. We don't get better futures without better dreams. But it doesn't end there: to borrow a line from the poet Delmore Schwartz, "in dreams begin responsibilities." While we nurture our boldest technological dreams, we also need to consider the human consequences of radical innovation. The ten winning stories here do this in the best possible ways, by exploring futures we should avoid as well as imagining happier scenarios.

- "A Flavorful Future," by Aliah Eberting of Utah, U.S.A., imagines a future where the nutritious brown mush Food® has replaced all human cuisine, and highly-trained flavorologists work tirelessly to make it tasty and appealing.
- "And the Tapestry of Stars Curled Up To Reveal the Face of God," by Christine Ann Hurd of Texas, U.S.A., explores intergenerational tensions in a world where immortality is possible for bioengineered humans.
- "A Toothache for the Truth," by Natalie Petit of Ohio, U.S.A., drops us into a future world where computers embedded in human teeth help us organize every aspect of our daily lives.
- "Genes of Tomorrow," by Claire Spackman of Hong Kong, envisions a future in which the world's top companies use genetic tests to vet applicants for competitive jobs.

- “LifeTime,” by Jorge Tenorio of Arizona, U.S.A., presents a future in which real-time health tracking technology enables people to dramatically increase their lifespans by obsessively analyzing every behavior for its health consequences.
- “Lost Dreams,” by Carlos Duralde of Georgia, U.S.A., imagines the future of policing after all human brains have been replaced by computers.
- “The Last Allocation,” by Michael Arteaga of Toronto, Ontario, Canada, considers how the medical profession will retain its cultural and economic authority after the introduction of an anti-cancer vaccine.
- “Parenthood Planned,” by Alycia McCreary of Kentucky, U.S.A., explores the ethical quandaries of a future where “designer babies” can be genetically modified for disease resistance and other desirable traits.
- “Family Feast,” by Hannah Reese of North Carolina, U.S.A., is a dystopian take on drone delivery services in a future where agriculture is banned in most of the world’s countries.
- “Descent,” by Diya Basrai of California, U.S.A., takes us inside the mind of the world’s smartest man, whose brain has been removed from his body and is used to single-handedly run the city of Los Angeles.

All ten winning stories dramatize the tension between our utopian desires for the future and the actual effects of technological transformation on diverse groups of people. Technology has the power to set us free, but it can also build new cages. We need to think of technology as a tool that we can use in myriad ways, bringing new risks and opportunities in equal measure. Our future will be determined not by the technologies we develop, but by how, when, and why we choose to deploy them.

These ten stories in the winners circle are just a small portion of the 273 stories submitted during the competition, and we will highlight many more through upcoming anthologies and the *Powered by Fiction* website. We hope that each of these efforts attracts readers and conversation, because the Tomorrow Project is a collaborative exercise. To come up with those better dreams, we need to foster dialog about all of our tomorrows. Sharing our collective hopes and fears is a powerful way to get people to invest the future with their own creative energies. If we can tell these stories together, we can find the big ideas and grand challenges that will shape the lives of our children and grandchildren. So please join us in congratulating the winners of *The Future: Powered by Fiction* by lending them your own powers of insight, enthusiasm, and critical thinking and continuing the conversation online and in your own communities. Tomorrow is waiting for you.

Balancing Promise and Reality

An Interview with TIME Magazine's
Bryan Walsh

A *s a reporter, you are often writing about the future: stuff that might happen. How do you balance promise vs. reality in those assignments?*

Balancing between future promise and reality is a major part of the area I cover, clean tech. There's no shortage of new technologies, new ways to power the world that seem amazing in the lab, but which will never make it from the pilot stage to market. I try to focus on what is cool and interesting coming out of the lab. I think there's value in making people aware of the innovations that could be around the corner, especially if it makes them more willing to support the sort of basic research funding that is vital to make this sort of work possible. But I also keep in mind the basic barriers that must be overcome if any new technology is to make a difference in the world, especially in the challenging energy market.

What about the future most excites you?

Big data is probably the single phenomenon that most excites me about the future. The ability to gather information on a far grander scale than ever before has the potential to change the way we do nearly everything. Business, education, politics, health, even the media—they'll all be altered as we begin to gather and analyze data about the way the world actually works, displacing theory for cold, hard facts. It might have an even greater impact on science. Scientists have

An Interview with TIME magazine's Bryan Walsh

always been limited by the amount of data they can gather—that's why we have samples and models. But imagine a data set that is $N=\text{all}$ —that is, the entire world. We'll no longer be subject to the vagaries of random sampling. We'll have science that reflects things as they are.

What about the future scares you the most?

At the same time, big data is probably the scariest thing about the future. That's because our ability to gather data still vastly outpaces our ability to analyze and understand it. We always think we know more than we do, but big data can facilitate a particularly pernicious form of hubris, as we think we're smarter than we really are. I can foresee dangerous consequences in particular for health and security, as we allow imperfect algorithms to displace tested judgment. Big data needs humility to be harnessed properly—and the technology industry is one area in the United States that has never been known for its humility.

What do you like about science fiction?

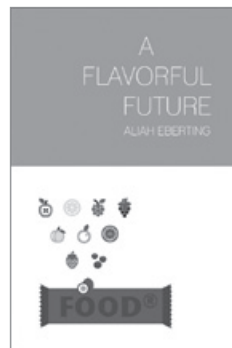
I love science fiction for its hope in the future. That might be a consequence of my childhood tastes, which ran heavily to *Star Trek*, but I love the way that science fiction takes some of the best traits of humankind—curiosity, skepticism, tolerance—and shows us how we can make a better future. I also love the way that science fiction makes technology and discovery itself central to its narrative, which fits the way the world actually is. Also I was never much into dwarves and elves.

If you could change one thing about the world today, what would it be and why?

Assuming I couldn't actually change one of the laws of physics—and, say, reduce the warming potential of carbon dioxide—I'd change the fundamental hostility with which science is still regarded by so much of humanity. Science isn't perfect—it has its own institutional failings, its own hubris, and it's been perverted too many times to count. But of all the systems of human thought, science is the one that is most responsive to change, that is most responsible—and which has made the greatest material contribution to human well-being. It's also the one we'll need the most in the future.

A Flavorful Future

Aliah Eberting



Revere felt the molecules drift into his mouth and hit his tongue with an explosion of spices. He snapped his mouth closed and inhaled slowly, to bring the flavor out and make it last....

He opened his eyes, “Garlic Hummus on oat pita with a honey filling. Slightly reminiscent of baklava?”

Instructor Smith growled in frustration. “No! Not even close. One of the standard 2,000 flavors for the exam, and you’re not even close. What happened to your homework? Hmm?”

Revere stared at the perpetually spinning desk toy, whirling in a mesmerizing mix of colors and flashes of light. He wondered what it would taste like and if one of the 2,000 flavors was metal. Metal was quite an everyday flavor, one that every toddler had the pleasure of discovering. Revere no longer remembered what metal tasted like. Maybe he would go home and formulate a metal-flavored food. Then whenever he looked at metal, he would know what it tasted like. He never forgot a flavor once he had eaten it. It was just these molecules he’d never eaten in food before that he had trouble with. He was hungry.

“Oh, I see how it is. I’ve invested hundreds of hours into your education, not to mention providing your equipment budget out of my own pocket, and you won’t give me or this class the time of day,” Smith snapped.

Had he been saying something? Revere stared at him with unfocused gaze.

Instructor Smith spoke through gritted teeth, “Get. Out.”

Revere shook himself. “What?”

“I said get out.” Instructor Smith hissed, his face dark and dangerous. “I am through with you. You never study. You never progress. And I don’t think you even care. You have no chance of passing the AP Exam. Which means you have absolutely zero chance of becoming a flavorologist. And hummus with honey sounds disgusting.” He pointed towards the door and Revere left, because he had been told to. It wasn’t until he was far down the hall that he let the full impact of Smith’s words hit him. He was going to fail the test. Just like that, his future seemed to shake – a few sentences from a dusty instructor, and it began to slip away, Smith’s words destroying it with every syllable.

Perhaps it wasn’t entirely Smith’s fault, a brutal, honest part of his mind whispered. Revere told honesty to stuff it. He was just no good at memorizing things. Of course he never really tried, honesty whispered. Revere shoved that thought through his brain and out his medulla oblongata until it rested somewhere in his neck. Out of sight and out of mind. The problem was that Revere had the temperament of an artist, and no desire to be confined by rules and guidelines. He wanted to be a painter – a painter of flavors. It was his dream, his goal, his very purpose for existence, like his father before him, and his father’s father. Besides, flavorology wasn’t some namby-pamby job. There was no way he was following in his mother’s footsteps in quantum physics, spending his days chasing ghosts – albeit very useful ghosts. Truthfully, she thought the same about flavorology. But flavorology was a vital profession, just as vital to prevent the deterioration of the human genome as a gravity generator was on colony ships. Yes, the entire human race owed its existence to flavorology, as he

explained to his mother daily. It basically controlled what every human on the planet was made of.

During the dawn of human peace, serious maladies – cancer, autoimmune diseases, diabetes – began to emerge in over three-quarters of the human population, largely because the entire world had access to whatever food they wanted, whenever they wanted, and most of it was incredibly detrimental to health. Revere had heard stories from the old days of the chemicals, sugars, and refined grains people had constantly consumed. Everything had white flour. Everything had corn syrup. It was almost like they threw it in there just to cover their bases. “Oh, that doesn’t have sugar in it yet? Well we’d better add corn syrup just in case.”

As a child, he had been flabbergasted as to why people would so willingly pump themselves full of poison. Needless to say, he’d revised that perspective considerably once he’d had the opportunity to try their flavors – thick and creamy chocolates, melt-in-your-mouth wafers, and every gooey candy under the sun. They were delicious. It was almost worth dying for.

Almost, but not quite. And that was the direction humanity had been heading. It was a disaster. People lacked the knowledge of how bad things really were, and even when they knew, they worked hard convincing themselves otherwise. Expected lifespans shortened. The average age of puberty dropped. The age range for full frontal lobe development rose from 25-35 years to 45 years and higher. And so the human race faced its downfall. Not from nuclear war or the floods of radiation that had followed. Not from a rogue asteroid or even climate change, but from the food they chose to eat.

And then, out of the blue, a bionics lab came out with Food®. Food®: a brownish mush with a slight sulfur aftertaste. It contained all the essential nutrients, micro-nutrients, vitamins, and calories necessary for optimal health.

“Guaranteed to bring joy in the long term with every bite!” advertisements shouted. And it was revolting.

Not until the chemist Q.P. Fishingston began his studies of the world of flavor did Food® even have a prayer. After years of research, billions of dollars, and the loss of his hair color, Fishingston established the science of flavorology: the ability to isolate flavors and add them to Food® (which turned out to be a brilliant flavor magnifier). Structural engineers were able to transform Food® from a homely mush into any texture or consistency they desired – cake, crackers, soup, Jell-O – all of life’s necessities. Humans could consume their vital nutrition while enjoying the exquisite dining experience of a thick clam chowder or a chocolate-smothered waffle.

As a side benefit, because humans experienced only the taste and texture, and not the fats and sugars that formerly followed such flavors, foods with a high glycemic index lost their addictiveness, leaving people free to enjoy flavors other than sweet or salty, flavors which previously had been sadly neglected.

So yes, flavorology was an essential profession.

Of course there were the Food® formulists and structural engineers, but only flavorology called to Revere. He wanted the joy of creation, the thrill of exploration, the chance to concoct an entirely new flavor. His career would be brilliant!

Except...it wouldn’t be. Because Revere had lost that future.

The exam was stupid, he thought bitterly. Pointless. Written by a bunch of stuffy instructors who thought their vision of a flavorologist was the only

possible vision. He could do all of it easily, except for the section on identifying sub-flavors. Why should he waste his time memorizing those flavors if he had no intention of ever creating them? If he wanted to paint a dragon, learning to identify all the water buffalo in the world wouldn't help him.

But without the exam, no university would accept him into their program. He needed the exam for a degree in flavorology – and he'd tried. He really had. But he was no good at memorizing the flavors. Maybe he wasn't cut out for this after all.

Oh well, he could always study quantum physics. Flavors were overrated anyway.

Revere angrily stuck his hands in his pockets and tried to whistle. The sound stuck in his throat. He wandered around the now-empty school for hours, ignoring the vocal homework prompts coming from his mobile, until he no longer felt like nuking the world or worried he might burst into tears if one of his peers so much as smiled at him. They were all in the dorms for study period anyway. They didn't have their future crumbling in their hands.

When he'd finally put the world back in perspective, he found himself in front of the cafeteria. The young workers started giggling as soon as he stepped through the door. They knew him quite well: he was here five or six times some days. He was pretty sure they were under the impression that he came simply to chat with them. He returned their smiles, then quickly turned to perusing the holo-menu. He did not come to chat with them. He was hungry. Something sweet would be nice. They'd revamped their menu for the start of the semester, though, and none of the selections looked familiar – not to mention that the display listed 2,000 flavors.

Revere froze. 2,000 flavors. He whipped out his mobile and aligned the menu against the AP's list of standard flavors. They matched perfectly.

He felt his eyes widen. He glanced towards the workers. They giggled harder at his expression and wiggled their fingers at him. He glanced back to the menu. This could be just what he needed. The perfect study guide. Revere never forgot a flavor once he'd eaten it in Food*. 2,000 flavors. Less than 100 days until the test. Revere balked. That was 20 meals a day. He didn't know if even his stomach could handle that.

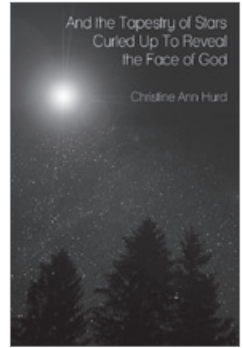
But it was his future, his dream. If it meant eating 20 times a day, so be it. He wasn't going to let anything stop him, much less a stomach capacity of only two liters. And he needn't eat the whole meal – a single bite would suffice. And the workers weren't actually that bad to talk to – they'd downloaded the menu for him, after all.

And maybe there was a slight, slight chance that Smith would start tutoring him again if Revere apologized profusely for his snotty behavior while presenting a brand new type of cookie – and offering to let Instructor Smith name the flavor....



And the Tapestry of Stars Curled Up To Reveal the Face of God

Christine Ann Hurd



Helen Baker does not step over the sanctuary's threshold, even though suicidal intention had been rebranded years ago as merely a venial sin. Her ankles crack as she does a little march-in-place before the arch. She is too old to imagine fanciful notions of bursting into flames for her sins, but she does have a prickly feeling that she is not welcome.

The thing is, though, she is absolutely the Church's target demographic. Her mortality – the ability to die – is the sole qualification for membership. All of the worshippers before her were mortal, and there wouldn't be that many afterwards. As for the immortal crowd, well...any faith system that requires death for salvation would be a tough sell.

She charges inside, takes a pew to herself, and with crackly voice sings the opening chorus a bit too flat, like a clear-noted call distorted under the pall of a witches' dance. The altar boys on either side of the priest shine like angels under the morning sun's golden glaze. Helen knows how the immortal mind works. She imagines the plaintive empathy of her daughter Athena weaving through the unhurried procession.

"We immortals fear death too, just on a more cosmic level," Athena's permanently girlish voice echoes. "We will die when the stars die, when the sky rolls up like a tapestry and leaves only the black wall behind."

Sounds more pagan than anything. Nothing made Helen feel more alone than listening to immortal poetry and hearing silence as her heart's response.

"Then the Lord said, 'My Spirit will not contend with humans forever, for they are mortal; their days will be a hundred and twenty years.'"

"Thanks be to God," the congregation sighs.

"Current as always," Helen mutters.

A shining immortal steps up the raised dais and booms: "He will wipe every tear from their eyes. There will be no more death or mourning or crying or pain, for the old order of things has passed away."

"Thanks be to God!" the congregation rejoices.

"What revelation," Helen sighs.

Helen doesn't even listen to the Gospel. Nevertheless, she drums her foot against the pew like a restless horse to divert her thoughts from her imminent suicide.

"Let us pray," the priest says shakily.

As she kneels, Helen can only call upon the dustiest of clichés for support. It is what it is. It being the Circle of Life.

"But it is not a circle," Helen snarls under her breath, "It is line segment AB equaling 120 years for me and my mother, and line A for my daughter and all generations to come."

As she thinks of the bitterness held in her heart, she asks God for forgiveness, even though she believes she can't act any other way, the situation being what it is and all. At least death – if the advertisements proved true – would deliver her from hating those wealthiest in time.

And the Tapestry of Stars Curled Up To Reveal the Face of God



The next Sunday is Palm Sunday, and Helen boards the train that will take her and her mother to die and her daughter to watch.

The train slices a fresh path through the mountain fog. Helen remembers when the fog used to frost the panes of the compartment, make the windows cloud up like a weary pair of eyes. The sun burns a beam through the thick cloud and reveals a scope of emerald and sepia pigment smearing past the carriage.

“Never could see the painting for the forest,” Helen quips and nods toward the window. Her daughter smiles indulgently.

In the darkest periphery of her retinal field, a lime green bubble reminds her to revisit the past year’s highs and lows. Only the highest of heart spikes, the thickest of dopamine soups, and the sexiest of fantasies will make it into her personalized panoramic! What will the highs be of a person who lives for a million years? Helen imagines a bevy of meteorites shooting across the pitch of galaxy space and frowns.

Save for the faint breathing of her sleeping family, the compartment is perfectly silent.

Helen never did get around to seeing the glaciers, and the oppressive heat of the middle states took any Lawrencean romance out of the deserts long ago. She only had eyes for the forest, and saw it each morning when she woke up, exactly as she had decades ago, the trees shining darkly against her myopic eyes. Of course, these eternal, spacious forests of Europe were the worst sort of lie. She had thought Europe would always be a Disneyfied continent – spanning from the Magical United Kingdom to high-tech Finland. Now she knows that the Europe of her youth will be seen by future generations as something out of a ghastly

Andersen fairytale instead. What kind of tales will they write? The little match girl death of the mortal? The sinking of paradise?

The corner of her eye flashes 0800 and the train attendant appears and asks in bloodless Hochdeutsch if she or her mother will need any assistance in leaving the carriage. Helen ignores him.

“Are we here?”

Mother and daughter both gaze through Helen to the shining white city beyond.

Her mother gasps at the Wien of her childhood, recreated on her retinal scan. She can see each block as it was before modernization or before the era of war. Her daughter’s eyes look dead, only the slightest of movements as she deftly responds to work messages.

“Oh...I didn’t remember that we would arrive on Sunday evening. I thought it would take so much longer,” Helen says.

“Austria remains Catholic. So few immortals, such an old population, you know,” her daughter said.

“Regardless, the car rental place confirmed. We can make it to mother’s town in less than a half hour. The hotel is ready as well.”

“You know, maybe the Catholics were right,” her mother offers dreamily. “Seems like us humans max out at 120. Oh, I didn’t mean to call you inhuman, Athena....” She drifts off into another nap as her wheelchair directs itself automatically onto the platform. Helen stares at the seat in front of her and then rises to follow her mother out. Her daughter follows with downturned eyes.



And the Tapestry of Stars Curled Up To Reveal the Face of God

Helen had elected to give her mother's eulogy between their deaths, and the pressure intensifies when she fully realizes that her daughter - and any children she would ever have - would have her words forever. Helen has had only 80 years of knowing her mother. Athena will have centuries, millennia, all of Earthtime to look at the life of her grandmother in four-dimensional retrospective. Helen tells herself that it's human nature to procrastinate when you can while time away, but then she is struck again with the fact that her daughter is not human.

She thinks on her mother for days in preparation. Not her 119-year-old hanging-by-a-telomeric-branch mother, but the image of her mother that teenage Helen braided into her mind with long strands of dopamine. That dazzling woman who worked until her body failed into microsleeps, who spent day after day patiently teaching Helen how to write "Hello, World," whose strong legs carried her through the hills of their land, whose face only blushed when meeting a Rocky Mountain sunset.

She tried to look outside her love, look past her opinion that her mother was too alive to die. Would pale, dreamy Athena see this day as genocide? Before learning of the singular quality of her death, Helen didn't feel pity when she thought of her short-lived ancestors in prehistory. Athena would most likely rationalize their deaths as necessary tribute to the dead gods of death.

But think on your mother, she tells herself. She may not live in flesh for long, but her life can be immortalized in cruder ways. Fight the impulse to let silence imply acceptance, Helen thinks as they speed towards her mother's village.



Helen stands in front of her mother's grave and orates in the clearest voice she can.

“From childhood, my mother’s prime directive was to never, ever let technology outpace her. It’s difficult to pin down this idea’s origin, but she always said that one of her earliest memories was of a cloudless, pre-9/11 day. She was flipping through computer manuals while my grandfather swore in cadence with the IT help line’s *Eine kleine Nachtmusik*. I suppose that was as good a moment as any to declare war on the reactionary.

“So my mother the kindergartner vowed that day to never lift her hand from the pulse of new technology. She majored in electrical and software engineering at Harvard University and led an encryption start-up that would eventually be bought out by Google. With the profits she bought a cheap server and began a joke Internet currency – the Galleon – that caught fire in an ironic zeitgeist. I remember when she would show me the gifts that were sent to her – cufflinks that doubled as pulse monitors, a portable holographic tennis court, an original 3D game sphere with the cholera glitch and all. Flashy things, very beautiful to behold.

“At the end of her thirties – an illustrious decade of work with the retinal hook-up conglomerate Imagine – my mother betrayed her radical promise and went off the grid. Doomsday prepping was trendy at the time, but she never subscribed to the whole “live by your wits and a sack of potatoes so you won’t look like a tit when someone inevitably breaks the Internet” Weltanschauung. Nevertheless, a 39-year-old Hester Baker simply declared at a well-attended company party that she was leaving her post and going Into the Wild. Her boss took her aside and explained that this was why psychologists were a valued part of the company’s health plan.

“She didn’t listen. She bought a cabin, met a man, stole his sperm, and moved her currency servers up to a remote location in the Rockies. Besides a landline, the

And the Tapestry of Stars Curled Up To Reveal the Face of God

only tech on premises was a minimalist hard drive whose OS was programmed to look like MS-DOS.

“She had me.

“When I remember my childhood in the forest, it blooms in my head as hazy photographic stills instead of the video of today. I know the haze is from age – the gradual failure of the mortal body through time – but I’d like to think that there is something beautiful about remembering my mother as she eventually chose to be remembered. Many people today would define her by her technological achievements, but my mother realized that no matter how advanced humanity became, she did not owe her life to anyone, especially not the cold and unfeeling march of technology.”

Helen pauses and looks at her daughter, who looks at her hands as if to say, “I just don’t have to assuage my own fears of death by treating you kindly at yours.”



After the eulogy, she records her thoughts and dangles them over the trash bin. Today is her last day. She hopes that the legal assurances are in place for her. For all she knows, her daughter could completely rewrite her past. Then again, it doesn’t really matter.

She is about to take her contacts out when a news alert flashes across her entire screen.

“BREAKTHROUGH TREATMENT CONFIRMED AT CAMBRIDGE.
NON-EUGENICIZED IMMORTALITY DISCOVERED.”

Helen reads the article, holds her head in her hands and cries.

Athena rushes in, her lips and cheeks flushed with exertion. She stands tall and strong in front of Helen and she rushes before her and falls to her knees.

“Oh God, I was so afraid. I was so afraid. I was so afraid,” Athena weeps.

Helen mouths dryly, breathes with her entire body, racking breaths, horrible hyperventilating sobs.

“I’m so grateful. This is everything I’ve ever wanted. We’ll remember this day forever. I was so wrong. I shouldn’t have treated you so poorly.”

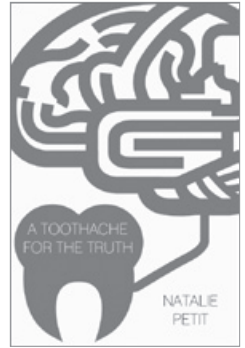
“Forever,” Helen whispers.

Helen looks at the pink pills in her hand and throws them on the ground. All thoughts of death banished, the darkness burns into light eternally.



A Toothache for the Truth

Natalie Petit



The alarm in Hugo's head woke him suddenly, jarring him out of a deep sleep. He shook his head to stop the buzzing noise, then swung his legs over the side of the bed and stood up. For a moment he felt extremely dizzy, and the world seemed to be spinning while he was standing still. Eventually regaining his balance and sense of direction, he proceeded to prepare for the day. His head, strangely, was still throbbing, especially around his right jaw. He ignored it.

Finding something to wear to work wasn't hard; a casual neon green blazer and khakis would do. In no time he was ready – hair combed and teeth brushed with a special cleaning solution that would not damage the Personal Assistant-Chip implanted in his tooth. He admired the way he looked for a moment in the mirror before opening the door to his apartment.

Hugo set out on his quick daily commute to his favorite little café and then to his office. Locking the door to his high-rise living space, he stepped into the glass-windowed hallway and peered each way to check for any Chamber Droids, cruising furiously on their single leg, never waiting for residents to get out of their way. One came shooting by, holding multiple stacks of folded towels, evidently headed for the pool on the ground floor. She made a sound familiar to Hugo, a loud beep-boop greeting.

“Good morning to you too, CeeDee! Have a lovely day!” he exclaimed, and then jogged down the hallway, following the droid to the elevator.

Stepping springily into the glass elevator and punching the illuminated button with a 1 on it, Hugo took a deep breath and activated his tooth A-Chip by saying one simple word: “power.”

“Good morning, Hew-go.” An automated female voice greeted him, saying the same spiel she repeated every morning. “The date is Monday, October sixteenth, two thousand forty-three. The time is eight twenty-five a.m., twenty-eight seconds. Is there anything I can help you with right now, Hew-go?”

The elevator dinged open and Hugo replied with an enthusiastic shake of his head and a “No, thank you!”

“All right. Sleep mode activating.” Hugo walked through the grand, golden, sparkling-clean lobby of the building out into the bright sunlight. He shaded his eyes with his hand and grinned as he glanced up and down the street before he crossed to the other side, getting closer to his destination: The IntelliCafé.

The sidewalk was already bustling with young men and women trying to get to work on time. Aboveground, everyday workwear ranged from suits and ties to casual polos and khaki pants in outrageous colors like magenta or baby blue. Above Hugo’s head, floating signs advertising new technology and the hottest fashions vied for people’s attention. A few low-energy cars drove up and down the street, but most people chose to walk or ride automated bicycles – “no need to pedal, and no exhaust!” one of the floating advertisements claimed – because of dangerous global temperature changes.

Hugo waved excitedly to a group of his colleagues, who were standing on the steps of another apartment building. One of the young men, Nathan, seemed to

be talking to himself, muttering something about not knowing how to get to his first meeting of the day. Hugo knew Nathan was speaking to his own A-Chip, asking for directions; Nathan paused and listened to the female voice giving him specific instructions on the best route to take on foot, bike, mass transit, or, if he so chose, by swimming.

Hugo kept walking as smells bombarded him from every angle – the sugary scent of apple cinnamon cappuccinos and baked pumpkin dough celebrating the coming of autumn floated through an open bakery door he was passing, contrasting with the odor of fresh dog droppings on the side of the street. He adored the smells.

Sounds of the city also resonated in his ears. He loved the sounds. An Urban Transport screeched to a halt under his feet – Hugo could see throngs of people getting on and off the underground train beneath the patch of translucent sidewalk upon which he stood. The sign in front of his face blinked green and a male voice shouted “Transport stop number 12, downtown” at any passerby, just in case they were sleepwalking and needed to be snapped out of their stupor to catch the train. He admired the generosity and thoughtfulness of that sign.

Finally, Hugo rounded the corner and strutted into the IntelliCafé.

“Good morning Hugo! Isn’t it a gorgeous day?” a young woman called to him as he passed by her table.

“Oh, it really is! Such a perfect, beautiful day – couldn’t have asked for more!” He plopped down at a small round table and punched five numbers into a keypad on the arm of the chair. The woman smiled at his turned back, admiring his optimism and joyfulness, wondering how every day he could act like a child on Christmas morning.

“Hello Hugo. The usual for you?” the table asked him politely in a monotone voice.

“Yes please, a vanilla bean frappuccino and baked cinnamon dough. You know, they are simply delectable here! You absolutely need to try one sometime.

Oh, credit my account, please,” he answered. The table dinged, ignoring the suggestion to try baked cinnamon dough, and electronically whisked the order away to the kitchen.

“How incredible is technology these days?” Hugo thought admiringly. “No one ever stops to appreciate all the things it does for us; we just take it for granted!” He leaned back in his chair and powered on his A-Chip. He unconsciously rubbed his jaw around the tooth the A-Chip was implanted in. The throbbing from earlier had subsided to a dull ache that was easily forgotten amid his busy schedule and high-on-life attitude.

“How may I help you, Hew-go?” the familiar voice spoke to Hugo.

“First of all, I hope you are having a fantastic day. Secondly, please read today’s top news stories to me,” he commanded. The A-Chip immediately retrieved the requested information and began reading the articles “aloud” in his head.

“United States launches manned space shuttle towards Mars to initiate colonization. Article posted by Ky Temson on Monday, October sixteenth, two thousand forty-three at eight nineteen a.m., fifty-seven seconds.” She paused. During the two second delay, a man sidled up to Hugo’s table. “Seven astronauts, three political scientists, three language interpreters, and two German Shepherds are, at this moment, travelling at fifty thousand miles per hour across our solar system in hopes of planting the seed of civilization on Mars...” the A-Chip continued, unaware of the awkward tension between Hugo and this stranger.

“Thank you; that was excellent recitation. Power off,” Hugo said. The A-Chip beeped in response and silently “went to sleep.”

“Hello! Can I help you, sir, on this wonderful day?” Hugo said to the man staring at him across the table. The mysterious man wasn’t too old, but wasn’t as young as Hugo. His face was kind and his graying hair implied wisdom. He continued to stare at Hugo until he broke the silence with one phrase, “What is that?”

Confusion and curiosity overwhelmed Hugo as he murmured, “What?” Still, he couldn’t help but giggle at the stranger’s seriousness.

“What is implanted in your tooth?” The man’s impatient tone enthralled Hugo.

“My A-Chip? I mean, Assistant-Chip?”

“Ah, good.” The man sat down at Hugo’s table just as an automated “tray waiter” approached and slid a steaming ceramic mug filled to the brim with vanilla frappuccino and whipped cream onto the table. Then it dumped a freshly-baked (or so the restaurant claimed) cinnamon dough with sweet icing onto the table almost on top of the mug. “Mmmmm.” Hugo expressed his appreciation.

The tray waiter’s sensors registered both Hugo and the other man and it asked, “Can I get either of you anything else?”

Hugo declined with a polite “thank you very much.” The other man simply shook his head.

The man stared down at the fake wooden table, tracing the stamped-on patterns with his finger. Hugo sat sipping the steaming hot drink and nibbling his roll, twice offering the stranger a bite from his “astoundingly delicious baked dough” and a sip from his “mug of pure vanilla goodness,” and waiting for the stranger to start a conversation.

Finally the man glanced up and said, “I apologize, I never formally introduced myself. I’m Dr. James Colbie from the EHDI.” Hugo recalled hearing about the Earth and Human Development Institute. It was a renowned organization that was currently studying the negative impact of the Personal Assistant-Chip on the human brain.

Hugo stuck out his hand enthusiastically. “Very nice to meet you, Dr. Colbie. I’ve heard of you. Aren’t you one of the principal researchers on the case of A-Chips?”

Dr. Colbie grinned and nodded. “That’s what I was coming to talk to you about.” He stood up suddenly. “Come with me; we have a lot to discuss...but not here.” He glanced around suspiciously, but everyone else in the IntelliCafé was absorbed in their own conversations and food. He strode to the exit before Hugo could even react.

Hugo shoved the remainder of the cinnamon roll in his mouth, grabbed the coffee cup, and half-jogged to the door. He attempted to wave to every single person in the café on his way out.



A sterile, chilly, white room opened up to Hugo. Whirring in one corner were multiple machines with strange images and foreign vocabulary on their screens. Shuffling in, he pulled down the plastic-like sleeves of his hospital gown over his fingertips and sat down on a white plastic chair. He was nervous. Glancing around, he noticed a single genuine abstract painting on the wall above his head. He thought about how ugly modern art was until the cold got to his senses again. His breath blew in front of his pale face and he rubbed his frozen hands together for warmth. Recalling the words of Dr. Colbie only a few minutes earlier, “It’ll only be a moment or two until we get a chance to look over the results,” Hugo wondered desperately how long those moments would really be.

A knock on the door made Hugo jump and rise awkwardly from his seat with a crunch from his gown. Dr. Colbie and two other men, who Hugo recognized as the two doctors who had assisted Dr. Colbie in Hugo's scanning, marched into the room. It suddenly seemed cramped and claustrophobic, a jolting shock to Hugo's senses, when the others entered. His heart felt like a frozen rock with jagged edges, occasionally poking his insides in a way that he had never felt before.

"Well, Hugo, we have some good news...and some bad news," Dr. Colbie started. He shared a look with the other two men, a look that Hugo immediately distrusted. "I suppose we'll start with the bad news first."

One of the other men, with silvery hair slicked back with spiky ends and blue-green eyes shining with eagerness to share his secret, stepped towards Hugo's chair. He was gripping something tightly. "I am Dr. Wayne Johannes. I'm a Lead Scientist for the Personal Assistant-Chip Impact research project. I want to share with you some information we have gathered about your brain and the effects of the implanted A-Chip." He clicked a button on the instrument he was holding, lighting up the LED screen and revealing to Hugo that it was a TekTab, a result of 50 years of advancement in "smart technology." He tapped the screen three times and came up with what appeared to be an X-ray. Hugo leaned in and examined the tablet. He found an image of a brain – his own, he guessed – with odd markings and symbols drawn on top of it.

Hugo pointed to a long squiggly line. "What does this all mean?"

Dr. Johannes smiled politely. He said, in a voice Hugo could tell was supposed to be used for young children, "That line is a signal emitted from your A-Chip. The sequence of peaks and troughs represents a code for euphoria." Hugo saw that every line drawn on the picture was a squiggle.

The other mystery man then approached Hugo. He held out his hand awkwardly for Hugo to shake. "I am Dr. Joe Franzer, the consulting psychiatrist for your case." He grinned proudly for a second, then frowned. "I suppose you're still wondering what the bad news is." Hugo nodded, narrowing his eyes and rubbing his hands together again.

Dr. Franzer sighed and began, "Hugo, do you remember when you first got your A-Chip implanted?" Hugo recalled one year ago exactly, on his twenty-first birthday, sitting in an operating room, watching the anesthesiologist come closer and closer with an air-injection needle to put him to sleep during the implantation procedure. "Our research institute intervened in that one special case," Dr. Franzer continued. "We have been monitoring all activity to and from your A-Chip ever since...and also adding our own special signals that stimulate a euphoric attitude. Signals from the A-Chip are able to travel up a person's jawbone and rest in the amygdala, the emotional control center of your brain. Hugo, you probably did not know this, but you have essentially been on what we call a 'natural high' since the implantation."

Hugo's mouth dropped open before he could stop it. His heart jumped, but not with its usual joy. "Is that the bad news?" he asked quietly.

"No, Hugo. The bad news is that our theory was supported. Our theory was that if we submitted waves of euphoria to an individual's A-Chip, then it would have an effect on the subject for as long as those waves are present. We can theoretically control your feelings from our computer. This finding not only affects you and everyone else involved in this particular study, but also every person in the world who has an implanted A-Chip."

Hugo couldn't wrap his head around the concept of what these doctors were telling him – a way to make him feel different things through his Assistant-Chip? That was impossible! He racked his brain quickly to remember anything he had seen or heard that supported this outrageous claim. But he came up with nothing.

Hugo blurted, "So, if someone gets hold of the information and techniques needed to send euphoric waves, it could potentially damage, or I suppose help, everyone receiving those signals of elation."

"That's exactly right. I'm positive that there are also many other emotions we could entice you to display: anger, jealousy, fear, sorrow, trust, even love. But yesterday we received a message from your A-Chip that alerted us to the time constraint on this study. So we had to bring you in. Did you have an unusual toothache this morning, Hugo?"

Hugo nodded disgustedly as he stared at the ground and breathed warm air into his cupped hands. He had almost forgotten about the toothache he had felt when he woke up. He guessed that he had barely noticed because he was abnormally cheerful at that time. "Why am I not feeling happy right now, then?" Hugo demanded.

Dr. Colbie looked sympathetically at Hugo and told him the good news. "Because we had to do a few scans on your brain earlier, we let the euphoria subside until you returned to your normal, balanced emotional state. You are no longer under our blissful influence."

A sarcastic "fantastic" was all he got in response from Hugo.

"We are truly sorry for any pain we have caused you, but just think, you are a pioneer in a field of science that will explode very soon." Dr. Colbie, Dr. Johannes,

and Dr. Franzer beamed proudly at a confused and sullen Hugo, then filed out the door.



Trudging home after the ordeal at the Institute, Hugo wondered if he ever really had felt happiness. He didn't know what to feel now. Bitterness? Thankfulness? Or numbness? He decided he didn't care.

"Power?" he attempted to command his A-Chip, not expecting it to respond.

"Good evening Hew-go," the automated voice surprised him. "The time is seven thirty-four p.m., thirty-two seconds. Is there anything I can help you with right now, Hew-go?"

"Yes. I was wondering how I feel right now. Can you tell me?" Hugo waited expectantly for an answer from the assistant that could not lie.

"Computing..." A brief whirring noise accompanied the voice. After a few seconds, the voice said, "Right now, you are feeling like yourself, Hew-go. You may change this data at any moment. I am sorry, but I cannot do that for you."

Hugo chuckled, scolding himself for being so uptight. "It's just a computer," he told himself, relaxing. "Hugo, you're still in control."

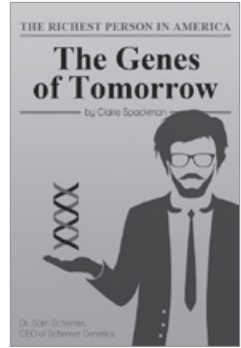
Continuing back to his apartment, he thanked the Personal Assistant-Chip for its help and powered it down.

It responded with one beep – "Sleep mode activating."



The Genes of Tomorrow

Claire Spackman



“I like you,” the interviewer remarked, smiling, as he wrapped up the lively session. “We’ll get back to you in a few days.” Amanda was pumped. She had nailed all the questions intelligently and confidently. She was certain that she would get the job at Goldman Sachs, the most respected investment bank on Wall Street.

While waiting for a taxi on the street, the always overly confident Amanda Stone, a recent magna cum laude graduate of Harvard University, picked up a copy of *Forbes* magazine from a nearby newsstand. She glanced at the magazine cover and into the face of Dr. Sam Schemer, *Forbes*’ “World’s Richest Person” for 2035. She was beaming with pride to see a fellow Harvard alum, 35 years her senior, sit atop of the *Forbes* list for the third straight year. “You just wait, Sam,” she whispered to herself. “One day, I’ll be as rich as you.” Everyone who knew Amanda knew that the driving force behind her ambition was one thing and one thing only: money.

The wealthiest man on the planet made his fortune as the CEO of Schemer Genetics, a company that pays people to take genetic tests and stores their genetic data for “future use.” It all sounded like a wacky business model when Sam Schemer first started his company 23 years ago using his entire life savings, but no one is laughing now. Schemer Genetics owns the world’s largest database of genetic test results and specializes in predictive genetic testing, which predicts how a person will develop physically and mentally over time. The

company owns the biological roadmap of more than half of the people in the U.S. and a rapidly growing percentage of those all over the world. It uses genetic data to help people prepare for and prevent diseases that they are likely to encounter in the future. For example, if a person's genetic test shows that she is predisposed to heart problems, she can take extra care to avoid consuming fatty foods and heart-damaging habits like smoking. The company urges young people to take the genetic tests for a healthy future. Needless to say, Schemer Genetics has saved millions of lives on its way to becoming the world's largest company.

"How great is that?" Amanda often exclaimed to her uninterested relatives. "Saving the lives of millions and earning billions!"

Most people want to know their genetic code to prevent the chances of future medical problems, and some are even willing to pay for such information. However, in the case of Schemer Genetics, the company pays the test taker! For the millions of young people that take Schemer Genetic tests every year, it's a no-brainer.

During her cab ride home from Manhattan's Financial District, Amanda remembered the day during her sophomore year when she entered one of the many Schemer Genetic Clinics in Boston to take the one-day genetic test and earn an easy \$200. Everyone at Harvard (and every college student in America) seemed to be doing it and earning some easy spending money. At least one Schemer clinic was located in every neighborhood and near every university campus. Anyone who had not taken the test was considered "stupid" and "brainless." With a slight giggle, Amanda recalled the desperation and speed with which she filled out the mountain of paperwork at the clinic so that she could buy the iPhone 19 she wanted so badly. "Too bad you can only do it once," she thought mischievously.

Three days later, as the new Connie Talbot single began to play from her iPhone 21S, Amanda reached into her pocket to answer the call. She recognized the caller ID. It was Mr. Bryson, the interviewer from Goldman Sachs.

“Hi, Mr. Bryson. I’ve been expecting your call.”

As Mr. Bryson started to talk, his voice sounded apologetic. “I’m sorry, Amanda. We all liked you a lot, but....” He paused for a few seconds. He cleared his voice and continued. “You didn’t make it. I’m very sorry.”

Amanda inadvertently hung up in a state of shock, staring at the stark white wall in front of her. She had performed so well at the interview and, more importantly, she graduated at the top of her class at Harvard! Amanda was utterly baffled and could not comprehend what she had just heard. “How is this possible? Where did I go wrong?” she asked herself and her parents in despair.

Over the next two months, Amanda interviewed with five more investment banks. She felt confident after each interview, but was rejected by all five firms. No one would give her a specific reason why she wasn’t hired. It was all too strange, and Amanda was determined to find out why she was constantly being refused. Swallowing her pride, she gathered up the courage to call Mr. Bryson.

“Hi, Mr. Bryson. It’s me, Amanda Stone. I completely respect the fact that your firm decided not to hire me, but I would really like to know how you made your decision,” she began politely.

“Again, I’m sorry, Amanda. I can’t tell you that. It’s our company’s policy not to disclose the reasons.”

“Please, Mr. Bryson. Can you please tell me? One Harvard grad to another?” Amanda was persistent. After several minutes of pleading and begging, Mr. Bryson finally whispered, “It was your DNA.”

“Excuse me, Mr. Bryson. I don’t quite understand. What do you mean by ‘my DNA’?”

Mr. Bryson reluctantly continued. “For the last five years, almost all companies have been purchasing genetic information on potential job applicants to see if there are any ‘issues’ to be aware of. In your case, we found that your genetic results show that you may be prone to depression and even violence. The evaluation of a candidate’s genetic results is a requirement in our company’s hiring policy, and I can’t do anything about it. I’m sorry.”

“But...how can you not hire me simply because of my genetic test results? Genes aren’t the only thing that determines my life – there are so many other factors that can influence a person! Just because my genetic test results say I’m likely to be violent doesn’t mean I’m going to flip out and kill my co-workers! That’s just ridiculous!”

“I’m sorry, Amanda,” Mr. Bryson interjected firmly. “It’s the company’s rule. That’s how things are now.”

Just as Mr. Bryson hung up, Amanda suddenly remembered the pile of forms she rushed to sign at the Schemer Genetics Clinic three years ago. One of those forms was a contract that allowed Schemer Genetics to share and use the results of her genetic test for “non-medical purposes.” At the time, Amanda didn’t think of this as a big deal. The only thing that was important to her was the cool \$200. She had never imagined that her genetic test results would endanger her future.

Amanda darted over to the *Forbes* issue that she bought a couple of months ago and perused the lengthy profile on Dr. Sam Schemer and Schemer Genetics.

Reading the article, she discovered that almost every large corporation and government agency in the U.S. bought genetic information from Schemer. Chills ran down her spine as she counted the ways that this private information could be used. The police could wrongfully suspect people of crimes because their genetic data might show that they are prone to violence. Life insurance companies could refuse to provide policies for people with an increased risk of cancer. Colleges might refuse or accept applicants based on their genetic test results. And as she experienced firsthand, companies wouldn't hire people with problematic genes. The possibilities were endless.

It also bothered Amanda that Schemer Genetics was targeting mostly young people, like naïve college students, to take the “harmless” tests and sign the papers. Of course, the cash was bait for the young and poor. She couldn't help but think that Schemer Genetics had created a new dangerous form of prejudice. “Soon, most people's lives will be determined by their genetic code,” Amanda typed on her blog. “People will be judged by their genes rather than their achievements, hard work, and experience. How is this different from the racism that still plagues our society?”

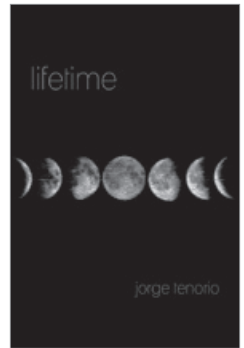
Most people believe that Sam Schemer is a hero that saves millions of lives, but Amanda had seen the other side of the “World's Richest Person.” To Amanda, Schemer was the creator of a new form of prejudice and an exploiter of people's privacy. Sam Schemer had always claimed that he was not interested in money and that he had started his company to save lives. She began to feel a furious sense of betrayal rising inside her as she realized that Sam Schemer has been exploiting young people to enrich himself under the guise of being a caring lifesaver. Right there and then, she decided to throw away her ambitions to become as rich as Sam Schemer. She would devote her life to put a stop to this

runaway train. Her first step would be to sue the investment banks that refused to hire her. For the first time in her young life, Amanda had found a purpose besides making money.



LifeTime

Jorge Tenorio



Imagine doing more than the generations before you because you have the opportunity to live longer. What would you do? How would you live? We would all have so much more to accomplish, learn, and realize, but we would also have increased chances of suffering, misfortune, and loneliness. Time is relative in more than just the physical sense proposed by Einstein – in my case, time proved to be the next big plague.

I had finally reached my goal of 175 years of estimated lifetime. At that moment, I remember looking triumphantly at the glowing message stamped across my forearm: “Antonio Verraz, Expiration Date: 2197.” After 15 years of strict dieting and excessive exercise, I was able to extend my life from 170 to 175 years – not bad, considering the national average was currently around 142 years. Sure, I enlisted in the aid of a few age supplements, but they were only truly effective because of my solid commitment to health and exercise. At least I wasn’t one of those health freaks with implanted oxygen enhancers or modified cardiovascular preservation systems. Yes, I couldn’t afford those sorts of enhancements, but they were a little too extreme for me anyway. I preferred to extend my life the natural way. I made huge age gains without investing huge amounts of cash in expensive surgeries. My reward was more time to live my life.

After Longevity Enterprises released LifeTime in 2020, people started doing anything they could to raise their life expectancy. The technology was revolutionary: a simple implant that used hundreds of physiological measurements to estimate an

individual's lifespan. Of course, the first few models were off by a few years, but now the device was accurate to the very day you would die. Access to a device capable of estimating lifespan gave rise to a mammoth industry and an entire culture that revolved around extending life. When people saw their expiration date on their arm, they did everything they could to push it back: dieting, exercise, mental therapy. You name it. A friend of mine started listening to only classical music because of a study that claimed anything else might be associated with a life expectancy decline of about a year. Then, of course, you had the wealthy that were able to afford the implants, surgeries, and therapies to add well over 10 years over a span of three. My boss, for example, underwent three lung enhancement procedures to extend his life by 10 years. The privileged could ensure that they kept their wealth longer – money bought time.

The global enthusiasm to extend life led to a rapid adoption of healthy lifestyles – we were all competing to live longer. While people from the older generations were passing away at younger ages – currently at about 100 – we younger kids were pushing the boundaries at an extraordinary pace. Before this all happened, I thought we might evolve to be stronger, smarter, or adapt to new environments, but I was wrong; we were evolving to live longer. We were evolving to make something more of our lives with the extra time given. Although we would naturally think living longer was better, there were serious issues we did not foresee or prepare for.

Living longer meant a much larger world population – it was hard to find any habitable place that wasn't severely overcrowded. The price of everything increased and first world countries experienced mass emigration as their citizens looked for more space, more jobs, and lower prices. We experienced a shift in social class. The rich had to give up more of their wealth and dropped

into the middle class, and the majority of the middle class dropped to a state of poverty. The poor gradually became extinct; they could no longer compete. Everything was expensive and everywhere was crowded, but at least we had more time – or that's what we thought in the beginning.

So what did we do with all the extra time? Well, time at that point was more relative than ever. At 45 years old, I was young. I earned my bachelor's degree in biomedical engineering by 22, a master's in mathematics by 28, and a Ph.D. in public health by 30. I held three jobs while earning my degrees, and another seven after that. Part of me thought about going to medical school and focusing on the emerging field of prolonged life medicine, but I was never able to make the commitment – partly because healthcare was becoming less necessary. Maybe I should have given that path more thought. I might have been more useful to the world if I knew something about how to stop this thing.

My latest job, job number eight, was working with the Centers for Disease Control and Prevention (CDC) as an epidemiologist studying the spread of disease. My background in math lent itself to looking at numbers, and my interest in health lent itself to an interest in its preservation. To me, life was a network of numbers where balance was key. I recall the very day in my career when the number of particular interest was two – two new cases of a spreading blood condition then affecting about 40 people.

The field specialist told me they were twins, 12 years of age. As I looked at them through the glass window, I saw their deep and desperate breaths for air. Their faces were red and sweating as if they had a fever and their bodies were both emaciated. They were laying side-by-side in separate beds and they each had their heads facing towards each other. Although they didn't make a sound besides their breathing, tears streamed down their eyes onto their pillowcases. I couldn't tell if

it was their fear of death or their compassion for their sibling that made them cry. When I asked the doctor about their LifeTime, he said they were due to expire next week. Just last month their expiration date was 113 years. The story was the same as the previous cases. The twins died four days after being diagnosed.

Two years later, the condition came to be called hemotoxicity and its prevalence continued to grow. One out of every two hundred people was likely to contract the disease and die early. Luckily by then, we developed a series of therapies and drugs that would largely treat the symptoms, eliminating the immense suffering victims experienced when it first emerged. Death, however, was still the main outcome. The disease was nondiscriminatory and actually seemed to target people with healthier than average lifestyles. For some unknown reason, patient blood cells became overactive and consumed excessive amounts of biological resources in order to deliver oxygen to the body. The escalation of the disease was quick and virtually undetectable until a few days prior to death. In our delusion to live longer lives, we never saw it coming.

Cases of hemotoxicity came to be referred to as parasitic blood. City streets became eerily less noisy and crowded as people preferred to stay home. Why go out and risk infection when you could work virtually and have everything you need delivered through the network of delivery tubes? We became a culture of seclusion and paranoia: we avoided interaction with neighbors and constantly worried about our health. The people that were on the street were mesmerized by their LifeTime: they were waiting for that terrifying moment when their life span would change from years to days.

With the delay in progress from the medical community, people turned to technology. Longevity Enterprises released a new model of LifeTime capable of detecting parasitic blood the moment that 10 blood cells mutated. For a

premium, users could install software that could detect infected individuals within a one-mile radius – the perfect device for avoiding people. I even heard of the super-rich investing in hibernation pods that would preserve and nourish them for the next 100 years. Hopefully by then it would be over – hopefully by then we would have a cure. Time was running out.

I found out I had contracted the parasitic blood about a month ago. My LifeTime sent the alert pulse through my arm while I was in the transport tube on my way to work. The text was bright red and flashed the words we all feared to see: “DANGER! CONTAMINATION DETECTED...DIAGNOSIS: HEMOTOXICITY.” I felt the blood drain from my face and fear enter my heart. I started gasping and tried to fight back the tears. My heart was looking for a way out of this disease and trying to pound its way through my chest. As panic took hold, my LifeTime started emitting its warning message directly into my mind:

Mr. Verraz, I detect high levels of catecholamines in your blood. Please remain calm. The hemotoxicity taskforce has been informed of your condition.

“What do I do!? How do I stop this? I don’t want to die!”

Remain calm. Please avoid touching others nearby. GPS indicates you are currently on a transportation tube – initiating emergency stop protocol.

“Wait, NO! Take me to the hospital! I need to see a doctor! I need help! Why aren’t you helping me?”

Nearest hospital at capacity – no hemotoxicity patients admitted at this time. Please step off the tube.

With that, the tube immediately came to a stop and my seat pushed me out. I tripped and gasped for air. Looking back at the tube, I saw a terrified woman.

Undoubtedly she had been informed there was a disease sitting immediately behind her. Our eyes met as I trembled in fear, but before we could contemplate the situation any longer, the tube sent her off.

Mr. Verraz, a quarantine tube is on its way. Your stress levels are still high. By protocol 6526, I must calm you.

I sensed a cooling sensation throughout my body. It was as if my blood had been doused with cold water. The smell of city smog was replaced by the smell of hot chocolate – my favorite drink. I closed my eyes and my breathing returned to normal. My thoughts were no longer panicked. I was going to die in a few days like everyone else. My time was up.

Mr. Verraz, catecholamine levels are back to normal. Your LifeTime is now five days and two hours. Please avoid contact with other humans. Quarantine tube has arrived. Watch your step.

The night I was diagnosed, I sat in my bed looking out my window into our metropolis. Although I didn't live in the most luxurious neighborhood, I bought the place for the view. Every night I could look out and see the network of transport tubes tangled like roots around our skyscrapers. Every transport case is tagged with a blue light that illuminates the segments of the tubes as they propel forward. The city is constantly pulsing with these lights – they are the veins that carry whatever we need throughout our dying city.

I enjoyed staring at the Moon because it never changed, always following its usual lunar patterns and cycling through degrees of brightness. I could always count on finding that timeless orb in the sky, nestled among the stars. The Moon was one constant orbiting a world that invested in too much change. For someone who was once destined to live a life of 175 years, the constant change

was too much to handle. A new disruptive technology every five years made me feel like the world I lived in was too unstable. I felt like we were outpacing nature...but then again, I guess nature finally caught up to us – or caught up to me at least. I was set to die.

The next day, I talked with a colleague of mine from the CDC. He told me that the doctors finally figured out where this parasitic blood came from: in our quest to live forever, we failed to consider the pace at which we desired to evolve. We developed the technology that could help us to artificially live longer, but our bodies could not keep up. Our bodies were growing tired of producing cells; the blood-producing cells mutated over generations and produced faulty blood cells. From this acquired mutation of our blood, a previously undetected virus became active and fed on our new, defective cells.

After he told me how it worked, I morbidly thought of it as nature's way of keeping us in check: we were depleting the Earth of its resources with complete disregard for the ecosystems we affected. Not only that, but instead of using our longer lives as an opportunity to make more connections with other people, we allowed the technology to consume our lives and isolate us from each other. At least we were finally starting to take a step back and pay attention.

Today is my final day. The Medpac implanted in my body allowed me to function normally, but I would die soon nonetheless. My LifeTime currently read one hour and 32 minutes. I decided I wanted to die outside in the city park. No one was interested in being outdoors anymore, and somehow it seemed like the perfect place to allow myself to be blanketed by nature's calming arms.

Mr. Verraz, you currently have an estimated one hour and 30 minutes left to live. Unfortunately, I am not authorized to alert anyone, in order to prevent

contamination. Would you like me to notify anyone of your expiration after you have died?

“No thanks.”

Very well. The mortuary crew will be alerted of your location 10 minutes prior to your estimated time of death.

I arrived at the park and sat on the bench overlooking the lake. I always loved this particular spot because the water would reflect the city’s skyscrapers and the sunset skies – this setting seemed like an appropriate one to take my last few breaths. The park was empty and only the sounds of deliveries through the tubes whispered above me. Although it was a lonely place, it was also peaceful. I could think and reflect while being enclosed in a city full of people that were hardly ever seen.

Mr. Verraz, death by hemotoxicity is a painful event lasting three minutes. We can avoid the pain by injecting a combination of drugs into your bloodstream. I will initiate the procedure shortly to ensure the drugs take effect at the appropriate time.

I had heard of the procedure before, and we were all aware that it was the most humane way to die, but I couldn’t help but feel that this was an artificial death. I knew it was a way to avoid the pain, but I felt like we were cheating nature to the very end. Being so close to the end, I couldn’t help but stare at my hands and wonder what was going on at the cellular level that was killing me. My skin was turning pale and my veins were distinct and protruding. I was still young but I felt old and feeble. I was sick and on the verge of death after I had fought so hard to live.

Mr. Verraz, the drugs have been injected into your bloodstream. You will not feel any pain. You have three minutes left to live.

So many goals and dreams left unfulfilled after trying to live a healthy life so I could have the time to complete it all. Is this how everyone infected by the parasitic blood felt? Did they realize that our technology and this disease plunged us into a culture of fear and solitude? I no longer had the strength to move, and an intense lethargy started to take hold of my train of thought. I felt no pain and stared into the sky. I felt at peace because it was a natural death.

Mr. Verraz, a cure has been found for the treatment of hemotoxicity. Your Medpac will now begin the process of filtering your blood and clearing it of the pathogen. Within the next five minutes you will be back to normal.

I couldn't believe it. Another victory over nature. I wasn't going to die after all. I wasn't looking forward to dying, but after realizing how much damage we had done by living longer, I was starting to think of it as nature's way of trying to balance things out. This wasn't my time to die. I'm sure my time will come. But how? Another plague? Famine, war, or maybe some natural disaster? Surely humankind will have something to do with our own downfall if we keep advancing at our current pace. Nature finds its way to balance the numbers.

Antonio Verraz, estimated life span: 175 years and two days.



I've Seen the Future, and It's Future Shaped

AJ Nafziger

Our actions, decisions, and investments – and the ways that others try to persuade us to make them – are determined by foresight. But to what extent is it actually possible to anticipate and plan for the future? Recognizing the inherent mystery that can only be revealed with the passage of time, this drawing is the first in a series exploring the idea of planning, ensuring that the future is taking the shape the way we want it to.

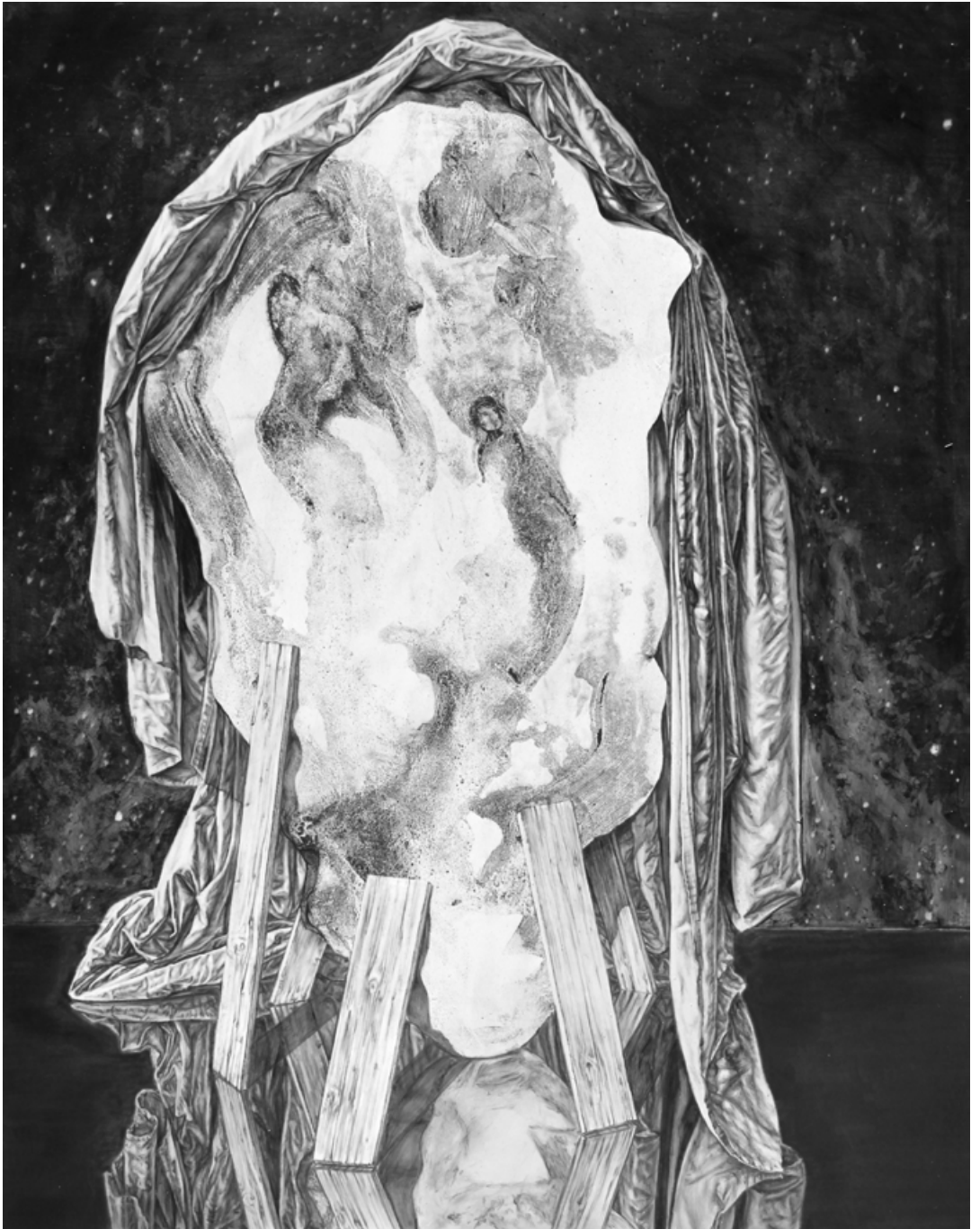
AJ Nafziger

I've Seen the Future, and It's Future Shaped (I)

2014 / 14" x 11" / Graphite on Yupo Paper

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

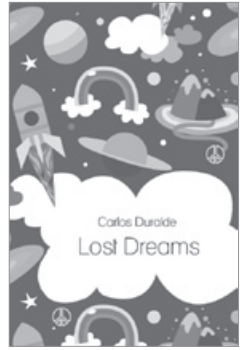
I've Seen the Future, and It's Future Shaped





Lost Dreams

Carlos Duralde



Everyone thought the future would be dandelions and rainbows, spaceships and teleportation, peace and prosperity. And in some ways that was true. Crime was down, way down, and technological advancements were popping up faster than we could consume them. Many people from credible scientific backgrounds claimed that we were just years away from cracking the genetic code to eternal life. But even in the year 2110, nothing good ever happened in an alleyway at 2:00 in the morning.

A young woman, late twenties by the sound of her voice, screamed from the shadows just as my partner and I turned the corner onto that very street; our late-night patrol was about to be a late-night encounter. My partner slammed on the breaks and we jumped out of the car, bolting toward the alley in question. I'd been in situations like this dozens of times, and in all likelihood it was some unarmed bum "just looking for a good time"...but something about tonight's assignment made me wary of what was to come.

Maybe it was the way he had said it: "Cleaning duty." I'd been on the force for two years now, and there were a lot of things you saw in two years running with the finest police department on the planet. This was not one of them, though. This was my first cleaning duty, and something in my gut told me it would be anything but clean.

"Hands in the air!" Jerry yelled into the shadows.

Jerry drew his weapon to show the man he meant business. To my shock, the man at the end of the alley drew his weapon to meet Jerry's without missing a beat. Two shots rang in the streets. If it had been broad daylight the man would have known better than to engage in a shootout with *the* Jerry Holkins. He was practically a national hero for how many criminals he'd bested in the line of fire. Even if he was a huge dick about it.

"Oh man!" Jerry said. "Did you see that?"

"Nice one," I said, half-heartedly feigning interest, preparing myself for the endless series of vaunts that were inevitably to follow.

"I got that sucker right between the eyes!" Jerry continued. "50 god-damn-thousand volts! Instant knockout."

It took every ounce of restraint in my body to keep myself from explaining, for the thousandth time, how amps were the real threat, not volts. I switched on my flashlight and we made our way to the whimpering woman and her incapacitated assailant. The woman's face was streaked with tears and her hair was disheveled in a way that implied the man had been rough with her, although she had no signs of bruising or torn clothing.

"Are you alright, ma'am?" I asked, crouching to meet her at eye level where she sat on the ground.

The woman shook her head.

"There was another man," she said. "He...he ran away right before you got here. He's still out there...."

"My partner and I would be happy to –" I began, but somewhere in the background Jerry was yelling over my voice.

“Everett, you gotta check this out! This guy had flame decals on his glock! Who puts decals on a pistol?”

Ignoring Jerry, I continued.

“I’d be happy to have you spend the night at the station if you’d like,” I said. “We have a 24-hour detail. You’ll be safe.”

She looked at me like she was trying to read me, the whole of me, and after much contemplation she responded.

“Okay. I can’t stay at home tonight. I don’t want to be alone.”

“You’re safe now,” I said.

I extended my hand to help her to her feet.

“May I ask your name, ma’am?” I said.

“Alice,” she said, grasping onto my hand with her tiny fingers as I pulled her upright. “Alice Tutttles.”

It was only then that the light revealed the details of her face, and she was beautiful. She was beautiful like rain during a drought, or a ray of light in a land of nothing but darkness. I found myself mystified and temporarily speechless in her presence, but another outburst from Jerry reminded me that I was still at a crime scene and I was still on duty.

“Wait right here, Ms. Tutttles,” I said. “I need to make sure the perp is secure.”

What I wanted to say was, “I need to make sure Jerry doesn’t do any more stupid crap.” Jerry was leaning over the body when I approached him.

“What are you doing?” I said in half-whisper low enough that Alice wouldn’t hear me. “Just cuff him and let’s get out of here.” I turned my back to Jerry to go move

Alice to the car when I stopped myself. “But hey, can we throw him in the trunk? I told Ms. Tuttle here we’d take her back to the station and I don’t want to freak her out. She’s been through enough, you know?”

“No can do,” Jerry said, not looking up from the body of the ragged, dirt-covered man. Then after a long pause Jerry said, “You got a thing for her or something?”

“You idiot,” I said. “Try to put yourself in their shoes for once. She just got assaulted and God knows what else, and I’m sure the last thing she wants is to have to sit next to the guy in a car for fifteen minutes, even if he is unconscious.” And then, just for the sake of persuasion, I added, “Nice shot, by the way.”

“You’re damn right it was a nice shot!” Jerry said. “This sack of shit is just lucky I was using taser rounds. Those pansies at the DA’s office can take my lead shells but they sure as hell can’t have my trigger finger. Anyway, the body stays right here.”

“What the hell do you mean?” I said angrily. “He committed a crime, Jerry. We can’t let him go until he’s processed and tried.”

“Oh, he’s guilty alright,” Jerry said, “but I know a way to make sure he never does this sort of thing ever again.”

Jerry grinned a devious grin and at the same time pulled a long, slender tool from his back pocket that I didn’t recognize at first glance. At the press of a button the tip of the tool crackled with a surge of electricity.

“Watch and learn, rookie,” Jerry said.

I observed intently as he used his key to unlock the back of the man’s skull. He lifted up the hatch in the skull plate, revealing a cavern of plastic and metal that encased the man’s brain. The brain itself was a 4.1 model, nothing special: 500

terabyte storage, decent surge protection, strong malware security. The brain came out easily after Jerry unplugged a few wires.

“You didn’t just...you know?” I said. “I mean I know doctors can do that, but –”

“He’s not dead,” Jerry said. “The bit that keeps him alive is still in there, the medulla block I think it’s called. But this” – he held up the small, spherically shaped hard drive – “is where his thoughts and memories are. This is where the criminal lives.”

He walked me through the steps of cleaning duty. He showed me how areas of the brain-drive lit up when they’d been used recently. He showed me how those lights could be used to pinpoint the dwelling places of criminal tendencies in the brain. And then he showed me how to neutralize those tendencies with the “buzz needle” so that the man would never have the urge to do those things again. We were giving him a brand new life, Jerry said. After reinserting the brain we left, Jerry driving, myself riding shotgun, and Alice in the back seat. I saw the sprawled body of the man in the alley sit up as we began to drive away. He stared at his hands as if he were looking for the answer to some great mystery.



The station was a shell of its daytime self, with only the low buzz of equipment and the occasional shuffling of feet to fight back the suffocating silence.

“The room’s all yours, Ms. Tuttles,” I said as we stood in a tucked-away corner in the back of the station. “You’ll have to excuse the mess; we usually use this room as overflow storage.” I walked over to the doorway and stopped. “If you need anything, there will always be an officer nearby. You can rest easy tonight. You’re in the safest building in the city.”

I waited for a response, but she remained silent. I nodded and eased the door closed behind me.

“Call me Alice,” she said.

Her words caught me mid-step and I spun around, poking my head back through the door.

“What was that?” I said.

“I’d rather you just call me Alice,” she said. “Truth be told, I hate my last name.”

I smiled. “Goodnight, Alice.”

When I shut the door to Alice’s room, Jerry was waiting on the other side, drinking coffee from a mug that had a “Quick Draw McGraw” logo on it.

“Christ, keep it in your pants!” he said.

“Ah, shut it,” I said. “I’m just being a decent human being. Believe it or not, some victims don’t sleep any better at night knowing you could shoot them in the face 10 out of 10 times if you wanted to. In fact, while you were busy bragging about your shot, I was gathering vital information about the case.”

“Like what, her phone number?” Jerry said skeptically. “We already caught the guy!”

“There was another guy,” I said defiantly. “He took off right before we got there.”

“Oh yeah?” Jerry said. “What’d he look like?”

I opened my mouth only to realize that I hadn’t been doing my job as well as I’d thought.

“Jesus, man!” Jerry said. “And when were you gonna ask her? When she’s running back home at the crack of dawn? Or were you just gonna wait until your honeymoon?”

“I meant to,” I said. “I mean, I was going to –”

“Just wake her up and do the damn scan,” Jerry said.

His com went off, alerting all units to a hot target downtown. He lit up with excitement, his eyes hungry for the hunt.

“This could be the guy,” Jerry said. “I’m going after him. Don’t go home until you’ve scanned that drive!”

“One pretty face and he forgets two years of training,” Jerry mumbled to himself as he took off for his squad car parked out front.

I exhaled deeply with frustration and then knocked on the door where Alice was sleeping. I waited one or two moments in silence before entering the dark room.

“Alice?” I said softly.

I heard the sound of rustling bed sheets and flicked on the light. She sat up in bed quickly.

“Huh?” was all she said, her eyes only half-open.

“I’m sorry to disturb you,” I said. “I hope it’s not too much of a hassle, but I need to take a quick brain scan of you. For the other suspect. The man that got away. Again, sorry for the trouble. I’ll make it quick.”

“Do I have to?” Alice said.

I had expected a response along the lines of “Okay, no problem, fine, sure,” so needless to say her words caught me off guard. Though it was probably just her nerves talking, I actually had to think about whether or not she was legally obligated to undergo a brain scan.

“I...I’m afraid so,” I said, almost certain. “It’s still an ongoing investigation, and we really do need your cooperation.” I smiled to convince her I was on her side. I was on her side. “It’ll just take a minute.”

Alice nodded, her lips scrunched tight, and I left the room to retrieve the scanner from the equipment locker. Lucky for me she was still in the room when I returned. I couldn’t see what had her so scared in the first place. Was she afraid I was going to use this chance to look into her past and try to find some instance of misconduct?

“I’ll only be scanning through the events that occurred tonight,” I reassured her as the scanning display powered on. “I just need to get a look at this other man, that’s all.”

She nodded again, visibly more worried than before. She scooted to the edge of the bed at my request and I held the scanner above her head.

“Just hold still,” I said calmly.

I locked in the time/date parameters and the machine began to churn, buzzing faintly as it analyzed every little detail of her thoughts. It beeped and hummed and buzzed some more and I waited for several minutes, longer than the scanner had ever taken to gather and sort a person’s thoughts, let alone from such a short time frame. Another minute passed and I grew impatient, and just as my finger shot for the abort switch, the machine beeped a harsh tone – machine code for impending bad news – and presented me with a message I neither recognized nor fully comprehended: “Null exception error. Nothing to scan.”

“What the heck?” I said.

It wasn't uncommon for these types of machines to break on occasion, but this one was brand new. I turned off the scanner and turned it back on again, but this time the very same error popped up within seconds of initiating the scan.

"I'm going to have to do a hardwired scan," I said, not caring to waste any more time.

I drew a high-speed data transfer cord out from the side of the machine.

"Do you have your drive key with you?" I asked.

"Um..." said Alice, looking lost.

I felt around in my pocket for a police-issue universal key.

"Here, I got it," I said.

I reached behind her head to find the keyhole to her skull-plate hatch, and as I did it she gave me a nervous look and closed her eyes. I quickly realized why. My hand felt nothing but skin and thick brown hair on the back of her head, and even when I ran my fingers in a circle around the area in question I was still unable to find the keyhole. But then it dawned it me that the absence of a keyhole was not nearly as strange as the lack of skull seams where the hatch fit into the rest of the skull.

"Alice," I said. "Just what the hell is going on?"

"Please!" Alice screamed. "Don't take away my brain! It's all I have!"

"Are you telling me you have an organic brain?" I said in utter disbelief. "That's impossible! They were all phased out decades ago. Having a brain is...."

I realized where my words had led me, but there was no avoiding the reality of the situation.

“...Illegal. The law states that any person found in possession of an organic brain is to undergo immediate brain-drive replacement surgery.”

“And what about my memories?” Alice screamed, louder. “Do I get to keep those?!”

“Well...no, I don’t think so,” I said timidly. “The transfers usually occur during infancy so there isn’t a real need to –”

“My relationships, my experiences, my personality...” Alice yelled. “That’s all in my memory. You’d be killing me!”

“Alice, please, calm down,” I said. “You need to calm down–”

“No!” Alice wailed furiously. “You think people are just machines you can program to act the way you want! I know what you did back in the alley, the way you changed that man. You can’t do this to me. I’m begging you.” She trailed off in a fit of tears muffled by her fetal-positioned body.

“Those men tonight,” I said. “They knew, didn’t they? They wanted your brain.”

Alice looked up from her tear-soaked knees.

“You have something that no one else has,” I said gravely, “and you will continue to be hunted for the rest of your life if I let you go. Are you willing to accept that?”

When she realized where I was going, her quickened breaths slowed and her head nodded up and down vigorously. I dug my face deep into the palm of my hand, reconciling any regrets I was sure to have.

“Then you need to leave here before Jerry gets back,” I said.

“Th thank you,” Alice said. “Thank you so much.”

“Come on,” I said. “I’ll drive you to your place. Pack a bag and call a cab. Get as far away from this place as you can.”

We loaded up into a squad car and I kept my eyes glued to the road, trying to find a reason why this was all happening to me. The night was unforgivingly dark and even with my high beams on, each second of road was an unwelcome surprise. It was as if I were driving in the void where my swirling thoughts were trapped.

“Why are you doing this for me?” Alice asked.

In the silence I had forgotten she was there. I didn’t respond for at least a minute.

“Why?” I said. “I don’t know, really. Maybe I’m getting tired of living in a binary reality.”

I didn’t know if she understood me, or if even I understood me, but I caught a glimpse of a smile on Alice’s face, and that was enough for me.

“Is it true what they say about dreams?” I said. “I read a blog post once about a man’s dreams from the 21st century. Have you, I mean, do you dream?”

“All the time,” she said. “Would you like me to tell you one?”

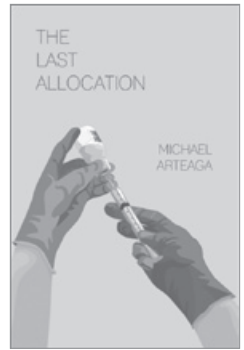
“I would like that very much,” I said.

And then she told me a story that could only exist in dreams, and I wept for having never known.



The Last Allocation

Michael Arteaga



“Assignment number 36754315, Royal Gate Hospital, London, England. The date is September 17th, 2091, 6:05 am local time. Acting G.D.A.P. allocation personnel are myself, Dr. Queenie Arkwright, and my assignment partner, Dr. Maxwell York.”

Dr. Arkwright paused the recording. Slipping on a pair of latex gloves, she picked the newborn up with both hands and gently placed her in the restraining cradle.

The newborn looked up at her with large blue eyes. She was freshly cleaned and looked very healthy.

Dr. Arkwright resumed the recording. “Subject of assignment number 36754315 is female, last name Emerson, first name Abigail. Time of birth: 5:42 am, date of birth: September 17th, 2091. Birth weight: 3.46 kilograms. Eyes: blue. Hair: blonde.”

Dr. Arkwright’s assignment partner, Dr. York, stood beside her. He was older than Dr. Arkwright and had been with the G.D.A.P. a few years longer than she had. He fiddled with some medical instruments before handing her the laser injector.

Dr. Arkwright continued. “Commencing stage one.” She used her left hand to pin the newborn’s left arm to the soft padding of the restraining cradle. Using her other hand, she aimed the laser injector at the tiny arm, the bright pink dot coming to a rest at the inner elbow. She squeezed the trigger and watched the pink dot disappear, leaving behind a tiny red scar.

The newborn remained motionless, untroubled by the painless injection.

“Stage one complete,” said Dr. Arkwright. “Subject has been dispensed the anti-cancer vaccination.” She handed the laser injector back to Dr. York before again pausing the recording. “What’s our official allocation?” she asked.

“Pulling up the file now,” Dr. York answered. He used a finger to scroll down the holographic display on the work panel. He found the correct assignment number and tapped it. Abigail Emerson’s data page opened up. Dr. York went over the information silently.

As she waited, Dr. Arkwright reached down and poked Abigail’s palm. To her surprise, the newborn squeezed Dr. Arkwright’s gloved finger. Dr. Arkwright couldn’t help but smile as she looked down into Abigail’s bright blue eyes, eyes that were full of innocence.

“Official allocation is...” began Dr. York, snapping Dr. Arkwright out of her trance, “cystic fibrosis. First symptoms are to emerge at age four; treatment is to be required shortly thereafter. Treatment is to last into early adulthood and will include antibiotics, followed by pulmonary rehabilitation and lastly, lung transplantation. Complete remission is to occur at twenty-eight years of age.”

Dr. Arkwright was silent for a few moments before continuing the recording again and repeating everything Dr. York had said. When she was finished, she paused the recording and turned to Dr. York. “Are you sure lung transplantation is a component of the treatment?” she asked. “I’d like to verify, please.”

Dr. York gave her a curious look before stepping aside and allowing her to view the newborn’s data page.

She looked over the allocation data, and sure enough, a lung transplant was in order. She sighed. “The vast majority of cystic fibrosis patients enter remission much earlier. A transplant is rarely needed,” she said.

“It’s not our place to question the allocation, Dr. Arkwright,” said Dr. York.

“G.D.A.P. regulations state that –”

“I’m aware, Dr. York,” she interrupted. She stepped back in front of the newborn and started the recording again. “Preparing stage two.”

Dr. York handed her a larger laser injector now. He pulled up another holographic display and began entering the necessary allocation data. When he was finished, he processed the data and removed the small allocation cartridge from the work panel. He handed the completed cartridge to Dr. Arkwright.

Dr. Arkwright loaded the cartridge into the laser injector. “Allocation cartridge has been prepped,” she said. “Commencing stage two.” She once again pinned Abigail’s left arm to the padding. She aimed the laser injector’s bright green dot at the small red scar left behind from the anti-cancer vaccination. She hesitated for a few moments, her finger resting on the trigger.

“Dr. Arkwright?”

She squeezed the trigger harder and watched as a slightly larger red scar formed over the smaller one, covering it.

She set the laser injector down beside the restraining cradle and removed her gloves. “Allocation complete,” she said. “All stages of assignment number 36754315 complete. Dr. Queenie Arkwright and Dr. Maxwell York signing off.” She ended the recording and headed for the room’s exit, leaving Dr. York to file another successful allocation.



Some hours later, Dr. Arkwright was taking lunch in the hospital staff cafeteria, sitting across from Dr. Dalton Goldsmith. Dr. Goldsmith was a young and talented doctor in his late twenties, at the start of what was sure to be a long and successful medical career. Unlike Dr. Arkwright, he was not affiliated with the G.D.A.P., and like most of the world's medical professionals, he was not even aware of its existence. Dr. Arkwright had come to like Dr. Goldsmith during her time at Royal Gate. He was intelligent, charming, and handsome. Although he was eight years her junior, Dr. Arkwright had caught herself stealing long glances at him more than a few times.

"Heard you had to come in for a super early vaccination," he said, stirring his bowl of steaming clam chowder.

"Yes," said Dr. Arkwright, "for a baby girl, born just before 6 am."

"How'd it go?" Dr. Goldsmith asked.

"Same as always," she answered, "she'll be cancer-free for the rest of her life and her parents are thrilled with their new daughter."

"That's good," said Dr. Goldsmith.

"Yes," she replied. She looked down at her untouched meal of cheddar broccoli soup and apple slices. She knew she should eat, but found she had no appetite.

Dr. Goldsmith seemed to read her mind. "Not hungry?" he asked with a smile.

Dr. Arkwright felt herself flush. "No, I-I mean yes, I'm just –"

"Are you all right?" he asked.

"I'm fine, I'm just a little tired," she answered. "Dalton, do you think you could –"

She was suddenly interrupted by a loud voice over the intercom. “Dr. Arkwright, please report to central administration immediately. Dr. Arkwright to Dr. Becker’s office, central administration, thank you.”

“Uh oh,” said Dr. Goldsmith, “What’d you do now, Queenie?”

Dr. Arkwright couldn’t think of a single reason Dr. Becker would want to see her, but nonetheless, she rose from the table quickly. It was never a good idea to keep Dr. Becker waiting. “We’ll talk later, Dalton,” she said, tucking in her chair. “You can help yourself to my lunch.”

“Don’t mind if I do!” Dr. Goldsmith said happily, reaching for her soup.

She turned around and headed for the elevators.



To most, Dr. Solomon Becker was simply the head of Royal Gate’s Anti-Cancer Vaccination Program, but in reality, he was one of the six founders of the G.D.A.P., and personally served as the head of its London branch. He was an older man in his mid-sixties and had a reputation of being extremely strict and by-the-book. It was he who had recruited Dr. Arkwright to Royal Gate six months ago.

He glanced up at Dr. Arkwright as she was shown into his office and then lowered his eyes back to his holo-display panel. “Hello, Dr. Arkwright. Please close the door and have a seat.”

Dr. Arkwright shut the door and sat in one of the chairs in front of Dr. Becker’s desk.

“I’m going to get right to the point,” he began, still looking at his holo-display panel. “Your assignment partner, Dr. York, has brought to my attention that you displayed some questionable behaviour during an allocation this morning.” He looked up at her now, his eyes locking on hers.

Dr. Arkwright froze as Dr. Becker's eyes pierced her own. "Dr. Becker, I'm not sure what –" she finally managed.

"Please, Dr. Arkwright," he interrupted, "tell me what we do here. What is the G.D.A.P.'s purpose?"

She licked her lips nervously before reciting the G.D.A.P.'s mission statement.

"The Global Disease Allocation Program exists to ensure balance and continuity in the post-cancer medical world, in order for the medical profession to continue through pre-determined and systematic worldwide disease allocation."

"Good to see you haven't forgotten," said Dr. Becker. "This is not the kind of behaviour I expected when I brought you to London, Dr. Arkwright. Your record with the G.D.A.P.'s Shanghai branch was flawless. Very impressive for a doctor your age. I'd hoped your presence here would give the London branch a considerable boost. Did I hope for too much, Dr. Arkwright?"

"No, Dr. Becker. I had trouble sleeping last night and was a bit tired this morning. I assure you it was only a minor lapse in judgement, and it absolutely will not happen again."

"Then there's no need to remind you of the consequences of underperformance in the G.D.A.P."

Dr. Arkwright shifted nervously in her chair. "No, Dr. Becker."

Dr. Becker eyed her for a moment before speaking again. "Do you remember where you were when you first heard the cure for cancer had been discovered, Dr. Arkwright?"

"Yes. I was just starting a night shift at New York General."

"And in that moment, did you not feel proud to be a doctor?"

“I did.”

Dr. Becker leaned back in his chair. “Curing cancer was the single biggest milestone in medical history. Twenty million human lives were saved in the first year alone. Think of how many lives have been saved since. These past 11 years have been the golden age of the medical profession. Never have we been looked upon with such wonder and admiration.” He leaned forward now and steepled his fingers in front of him. “And if these golden years are to continue, we, the G.D.A.P., must take the necessary actions. Without medical funding, and without hospital bills, our profession will wither away. The cure for cancer was a double-edged sword, Dr. Arkwright. Yes, tens of millions of lives have been saved, but it also left a massive hole in the medical industry, a hole the G.D.A.P. has since filled. If you wish to continue enjoying the prestige that comes with the medical profession, Dr. Arkwright, you will not allow your radical moral principles to interfere with your work. That is all. You are dismissed.”

“Dr. Becker, I have no radical –”

“You are *dismissed*, Dr. Arkwright,” Dr. Becker said coldly. “Consider this your first and only warning.”

Dr. Arkwright stood from her chair. “Yes, Dr. Becker,” she said, and exited the room.



That night, Dr. Arkwright lay awake in her penthouse apartment in London’s Southend. Tangled in the sheets, she stared at the ceiling, completely unable to sleep. The day’s events had left her tired and mentally strained. After leaving Dr. Becker’s office, she’d performed five more allocations, all with Dr. York. He had tried to explain his actions by saying he was simply following G.D.A.P. regulations, but it didn’t help to ease the tension between them. Before leaving

the hospital, Dr. Arkwright had looked for Dr. Goldsmith, hoping a friendly face would lift her spirits, but hadn't found him.

She thought of Dr. Becker's words: *If you wish to continue enjoying the prestige that comes with the medical profession, you will not allow your radical moral principles to interfere with your work.* Dr. Becker had seen right through her. He'd seen in her the weakness, the feelings that G.D.A.P. personnel were trained to suppress.

These feelings were nothing new to Dr. Arkwright. Over the past few years, she'd grown increasingly uncomfortable with her work. Before coming to London, her time with the G.D.A.P.'s Shanghai branch had been exhausting. She had performed countless allocations, sometimes more than fifty a day, in multiple hospitals around the city. Despite the long hours and mental strain of working with the staggering amount of newborns in the most populous city on Earth, she'd managed to excel in her work and leave Shanghai with the highest performance evaluation of any G.D.A.P. allocation personnel in Asia. It was enough to attract the attention of Dr. Solomon Becker, who saw her as a choice representative of the G.D.A.P. and everything it stood for.

At the start of her career with the G.D.A.P., the idea of being its poster child would have excited Dr. Arkwright. But after leaving Shanghai, she had felt more like a trafficker of pain and suffering than a glorified doctor. She felt shame every time she held a laser injector over a newborn's arm. She felt trapped in a web of lies and deceit.

More than once, she'd thought of abandoning her position with the G.D.A.P., but she knew that it was not a realistic option. The G.D.A.P. was cloaked in secrecy, meaning anyone and everyone affiliated with it was a potential security threat. If

she quit her job with the G.D.A.P. she'd be in handcuffs before setting foot outside the hospital. And the world's governments were connected to the G.D.A.P., meaning that a deserter was not only a threat to the security of the G.D.A.P., but to global security as well.

Dr. Arkwright rolled onto her stomach and tried to clear her head. She told herself to get some sleep, that she would feel better in the morning. When she finally slept, she dreamed of a baby girl with blue eyes, crawling and spewing blood. Alone, naked, and afraid.



“Assignment number 53621796, Royal Gate Hospital, London, England. The date is October 2nd, 2091, 3:47 pm local time. Acting G.D.A.P. allocation personnel are myself, Dr. Rosemary Ellerman, and my assignment partner, Dr. Queenie Arkwright.”

Dr. Arkwright watched as Dr. Ellerman lifted the first of the twin boys into the restraining cradle.

Dr. Ellerman started to hum as she picked up the second boy and placed him beside his brother. “Subject A of assignment number 53621796 is male, last name Manning, first name Isaac...”

Dr. Arkwright scrolled down the holographic display and found the correct assignment number.

“Subject B of assignment number 53621796 is male, last name Manning, first name Colton,” Dr. Ellerman continued.

Dr. Arkwright opened the twins' data page and started looking over the allocation data. She stopped to hand Dr. Ellerman the first laser injector, and watched as the twins were given the vaccination.

“Stage one complete,” said Dr. Ellerman. “Subjects have been dispensed the anti-cancer vaccination.” She paused the recording and looked at Dr. Arkwright. “May I have the official allocation, dear?”

Although she was just as devoted to following G.D.A.P. regulations, Dr. Ellerman was a much more pleasant assignment partner than Dr. York had been. She was an older, portly woman with a friendly smile.

Dr. Arkwright looked back to the allocation data and began reading it aloud. The older of the two newborns, Isaac, was to be allocated only a minor case of Hepatitis A, easily treated with a vaccination.

Colton, the younger boy, was to be allocated a far more serious disease. “Amyotrophic lateral sclerosis,” Dr. Arkwright said miserably. She managed to read Colton’s treatments aloud without hesitation, but stopped before reading the final words at the bottom of the data page. She breathed deeply and then spoke them.

“All treatments are to fail and be withheld; death is to occur at twenty-three years of age.”

Dr. Arkwright felt sick. Allocations that included a fatality were rare, but still occurred from time to time as a way of turning a family’s grief into support for the medical industry, creating the illusion that their support would help to prevent more families from enduring similar tragedies.

Dr. Arkwright entered and processed the allocation data. She handed the completed cartridges to Dr. Ellerman. “I need to step out for a few minutes. Upset stomach.”

“Of course, dear,” said Dr. Ellerman. “I’ll finish up here.”

Before Dr. Arkwright exited the room, she looked over her shoulder at Colton Manning, and made her decision.



One hour later, Dr. Arkwright sat on the edge of the bed in her penthouse apartment. She sat in silence for a whole fifteen minutes before dialling Royal Gate's number. When she was put through, she asked to speak to Dr. Goldsmith, and after a minute or so, she heard his voice.

"Dr. Dalton Goldsmith, cardiology," he said.

"Dalton," Dr. Arkwright said softly, "it's Queenie."

"Queenie? Did you leave early? Or are you calling from the hospital?"

"I'm at home," Dr. Arkwright said. "I'm calling to say thank you, Dalton. Thank you for being my friend."

"Queenie, are you alright?" Dr. Goldsmith asked. "Do you need me to come over?"

She paused for a moment. "No," she answered. "But I won't be joining you for lunch tomorrow. I just wanted to say goodbye."

"Queenie wait, what are you –" said Dr. Goldsmith, before she ended the call. She felt a tear roll down her cheek as she dialled another number.

As she waited for an answer on the other line, Dr. Arkwright thought of what would come next. Before the day was done, men would likely be kicking in her apartment door and placing her in handcuffs. She would be taken somewhere to be held until her punishment was decided. She would never see Dr. Goldsmith or anyone she cared about again, but she will have done the right thing. She closed her eyes and thought of Abigail Emerson, of Isaac and Colton Manning, of all the

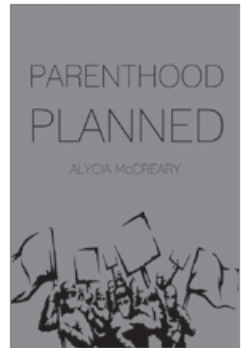
young and innocent faces she'd looked down upon over the course of her career. Soon, there would be nothing for them to fear.

She heard a voice on the other line. "Thank you for calling Press News London, how may I direct your call?"

Dr. Arkwright took a deep breath before speaking. "My name is Dr. Queenie Arkwright. I'm with the Anti-Cancer Vaccination Program at Royal Gate Hospital in London...and I have something to tell the world."

Parenthood Planned

Alycia McCreary



From metal gates to frozen, snowy parking lot edges, a sea of protesters swarmed. Their bellows merged into a roar as they pressed against the gates. Every Genetic Clinic was like this, surrounded by signs, by angry people with buckets of rotten offal and baseball bats, by their screams.

“...scientists playing God...” “...money-grubbing government...” “...children pay the price...”

We saw the center of the closely packed group nudged aside. Protesters and slogans were pressed so thickly that Jordan and I couldn't see what was coming, but we knew it was a car. No one coming to a GC legitimately would survive on foot. Ripples of people parted as the car moved slowly through the crowd, its speakers playing a constant, unheeded safety warning.

Finally the car's bumper pressed against the gates like a dog's nose. Knowing that we had to move the barriers, the protesters surged forward, hammers and knives in hand. They weren't playing around. My armor was a reassuring weight over my body.

Jordan pressed a button. The gates slid left, right, and up as the car slipped through. These conformational gates were programmed to open just enough to let in the car, but it never quite worked that way, so we stood on either side of the car and braced ourselves behind our shields.

Protesters crawled through the gaps, ripping clothes on metal teeth. I smashed my shield into the first two, smearing them with shit they'd thrown earlier. My

arm shuddered as hard-packed ice hit body armor. Shocks from my T-baton kept others back. Beside me the car surged forward and the gates closed quickly.

Not quickly enough. In those seconds someone hit me, or maybe my shield, with a baseball bat. Crumpled aluminum lay at my feet, along with two protesters jerking from the electrical jolt of the T-baton. As the adrenaline rush faded, every impact throbbed in what felt like a hundred places.

“Are they always like that?” asked one of the two women. Neither showed signs of pregnancy, but by that time it was too late for genetic alteration.

“Just another day on the job,” Jordan said, only his dark eyes and brown skin recognizable beneath the mess on his helmet.

“Thank you,” said the other woman, “for what you do. It can’t be worth the money.”

I smiled at her. “Not doing it for the money. Come on; don’t want to be late for the doctor.”

The patients left, and Jordan and I were again at the gates. We’d joked that minorities got the shittiest jobs. In one form or another, we’d had this job since the clinic opened. Thinking back to those early days, my mind’s eye filled with images of a smaller, less violent crowd. Slogans, shouting, but no bats, and cars didn’t pass through looking like they’d driven into a sewage landfill.

“Things are getting worse,” I remarked.

“And they’re going to stay that way until the Clinic dies,” Jordan grumbled.

“No chance of that. I’d fight through a crowd 10 times this size to give my child the best disease prevention.”

“Your appointment’s next week?”

“Yes –” I broke off. “Holy shit, look there!”

Protesters were packed tightly, but this time I could just barely see the car, its door gaping.

Jordan bellowed into his com-link, "Backup now! They've taken people."

I opened the gates.

Not ready for the sudden chance, no one got in before the window of opportunity closed, but Jordan and I became their new focus. No gates to protect us now.

Smashing my shield into the face of another protester, I bolted for the car, Jordan at my side. Together we hit the crowd hard and fast as falcons through crows. Hands grasped at us, ice balls hit my arms, my head, my sides, the impact absorbed by armor. I couldn't really feel it, just phantom pains. Just the press of a crowd bent on forcibly stopping parents who came to give their baby a better chance.

My gun constrained by regulations, I made quick work of protesters with shield and T-baton until I stood over the man, blood from his face splattered on the pavement below. He uncurled as I beat a little space, forcing attackers back. Jordan took a sign to the head, grabbed it and hit the protester with it before pulling the woman to her feet.

"Between us," I ordered the couple, and we slogged to the car.

Protesters packed tight as bricks between us and the car, most of them bristling with weapons instead of rotten food. No mere protest anymore. Too close together, too well braced, these attackers were ready for a rush like we'd done before. So I gave them a grenade and we ducked behind our shields.

Some bolted as soon as I threw it, thinking it was real. The grenade exploded in a mist of capsaicin and hard-rubber pellets pelting the unarmored crowd

indiscriminately. Their formation broke and we pushed forward, one of us on either side of the couple.

“Shit!”

It took me a moment to realize the man wasn’t being literal. Two deafening claps rang out and I toppled into him as bullets hit my shield.

Bullets. In all my time as a guard, no one ever had their bulletproof equipment tested in the field. Good thing it worked.

“Surrender!” I shouted, on one knee, raising my own pistol. “Drop your weapons and surrender.”

Firing in this crowd would be hell. An innocent would be injured, but if weapons didn’t drop, if they fired again, I’d have no choice.

Weapons dropped and they ran.

“Come in with us,” offered the man.

I shook my head. “We need to collect the guns.”

“Thank you, much appreciated.” added Jordan. “If you could drive slowly enough for us to keep up, that would help.”

As the car moved forward again, protesters moved, barely keeping their distance from us. We kept our backs to the rear of the car as we moved toward the gate. Under one arm I held the rifle someone had fired at me. Jordan had two other guns, but the protesters were still armed. Eyes reddened from capsaicin and hatred burned into us.

“This ain’t gonna end well,” Jordan commented.

The crowd swarmed closer and from behind my shield I heard the crack of a gun and the tick as it ricocheted off the car's back fender. Screw this. Security cameras at the clinic captured 20 or 40 people with weapons raised. I raised my pistol, justified. A hammer swung for my head.

I squeezed the trigger.

My husband was out the door, face colorless with fear, shouting, "What happened?" the instant I pulled into the driveway. He yanked the car door open and helped me to the house, ignoring the oven's automated "safety hazard: oven door open" warning.

"Not that bad," I reassured. Difficult to do while limping.

"The news just covered the attack. I tried calling but you weren't answering."

I held up my multi-tech, which had gallantly shielded me against a baseball bat. "Lost my helmet during the fight, but nobody died."

"They said shots were fired," he said. "Please tell me someone is rotting in jail?"

"Yes, and no one was even hurt...least not with a bullet."

"Safety hazard: turning off oven."

"Damn it! I thought you died."

"But I didn't. I'll be back in shape in a couple of days."

Will deflated. "This could happen again. Or worse."

I nodded calmly. "It could." Worry twisted my insides. "We can reschedule the appointment, or if you don't want to go...." I was being a hypocrite, but I didn't want him to end up like the couple today.

He shook his head once, definitively. "If you can brave guarding the GC every day, I can brave one day."

I accepted his courage. "Next week then."

"Triggering fire alarm."

Once we overrode the fire alarm, I asked, "Had any thoughts about what you want for our child?"

"No diseases and your athletic ability."

"Reflexes and strength would be nice, but if I didn't work in 70 pounds of armor all day you'd have to roll me out the door. Especially with your cooking." I took another bite of manicotti. "Don't want a child with weight problems."

"Just have to make sure the kid's active. Would you rather have one skinny and weak like me?"

"Weak? You bike 10 miles to work and back every day."

"Growing up, I was. Don't want any kid of mine having..." he paused, but went on, "having to do the diaper dance for bullies. If weight is an issue, well, that's what karate classes are for. Besides if they want to join the army like you did or the police or firefighters, they'll need to put on some muscle. Do you want to limit our kid's future?"

I smirked, remembering again why I'd fallen for Will. He was someone I could respect, someone strong, whatever he said. "Touché, but we'll have to come down extra hard on nutrition, so no taking the child for ice cream five times a week, no giving in to whining about wanting sugary cereal at the grocery store."

"Deal."

“Pity there isn’t a way to genetically instill a love of vegetables.”

“If there were, you’d never have to guard GC again,” he grinned. “Those protesters would beat down the gates to become patients.”

“Well, I’ve been thinking of giving our child a more responsible personality.”

“Kid’ll be a miniature of you. So serious they won’t even want to watch Disney movies.”

“A child like me wouldn’t decide that smoking marijuana at 2:30 am while driving with his buddies would be a good idea,” I fired back.

“Wasn’t it you just yesterday saying how tight money is? I’m sure that altering our kid’s personality will cost an extra few thousand we don’t have.”

He had a point, but.... “Maybe it’ll mean not having to bail them out 15 years later, or replace a totaled car. But alterations are expensive. Assume that any are about four or five thousand.”

“Wouldn’t health blow the bank? I know we have more than a few genetic diseases between us that need to go.”



Jailing two dozen protesters for assault and attempted murder crippled the group’s fury. They kept to “violation of the unborn” protest signs and attempted martyring. Carefully, on manual, I guided our car around these wannabes while its computer voice informed the protesters: “Please step away from the vehicle. You are in violation of safety code seventeen-point-nine-three. Have a nice day.”

“No,” Will growled. “Not have a nice day.” He tweaked the system’s voice box.

“Change message to ‘Move the fuck away.’”

“If changing the system’s words was possible, loads of people would have done it by now,” I said.

“It’s possible; everything is possible for the mad scientist with enough time on his hand. Damn it, it shouldn’t be illegal to kill these idiots. Do more for the human gene pool than all the clinics in the world.”

I’ve driven faster in snow and ice, but managed to get us there on time. When I pointed this out, Will said, “We’d have been on time if you’d just run them over too.”

“Hey Linda, I take it this is your other half,” said Jordan, opening the car door.

“That’s me. Looks like you’ve got your hands full,” said Will, nodding toward the crowd.

“Actually they’re a lot calmer,” said Jordan. “Hopefully with the most violent ones in jail, it’ll stay that way.”

Inside the clinic were normal reception desks, comfy waiting chairs, and bland carpet; not the kind of place that you’d imagine would hold cutting-edge, world-changing technology. The only obvious difference was the waiting desks where we emptied our pockets and handed over our bags for inspection.

“Linda,” said Nurse Brown with an overly enthusiastic smile, “good to see you well again, and I take it you are William.”

“You’ve heard of me?”

“We all have,” Nurse Brown said, engulfing Will’s hand in his own. My husband wasn’t a small man, but everyone was small next to Brown, who was the kind of guy that muggers jumped and said, “Oh, pardon me.”

“Dr. Payne will be here soon,” he said. “But here is a list of possible alterations, if there is anything you want to discuss now....”

“Yes,” I said.

“Why are people with last names like Payne compelled to enter the medical profession?” Will grumbled.

Soon meant nearly an hour, which was to be expected with Dr. Payne. She had to be 50 at least, but her Asian heritage kept the gray and the wrinkles at bay. As usual, she dressed barely within the limits of professionalism.

“So what alterations have you decided on?” she asked.

“No preventable diseases, highest IQ and physical abilities, and a responsible attitude,” I reported.

“You realize we can’t prevent some diseases even with the best genetic alteration, and with others we can only limit the chances your child will contract them.”

“Understood,” said Will.

“Anything else? Height, bone build, body proportions, direction sense, gag reflex...?”

“Keep the other genes, so long as it’s not endangering our child’s health,” I said.

Very few genes were purely good or bad. Deciding wasn’t easy, made me feel like a god...and not in the good way. Any parent would be terrified of ruining their child’s life, and gone was the time when the worst possible thing was naming them Bertha Hubertine.

“Control the child’s sex...?”

“Leave it be,” said Will.

After a glance at a chart Dr. Payne said, “With your employee discount, that will come to \$20,212, down from \$25,000.”

Inside I winced and let Will pay. We were still over budget, and those were the few alterations we had agreed upon after a week's debate. "Good thing we didn't try altering sexuality," he commented.

"Don't expect miracles," Dr. Payne warned. "We can only work within the parameters of the alleles your genes have."

"I'm a genetics teacher, so I know the limits. All we can do is give our child the best we have."



I was in labor, buyer's remorse in mind. Stories swarmed the net and holoscreen of genetically altered babies too disproportioned to walk, born with too-small lungs, or even brain-dead. One celebrity paid for pink eyes and gave up the resulting albino. We'd chosen for function, not looks, but the GCs had accidentally swapped patients' orders before.

More pain hit me, right on time. "Calm down," I said to Will, ignoring my pain. "The contractions are still 10 minutes apart. Set the car to auto-drive."

It jerked under his hands. "Honey, I just want to get you there before the baby's born. Early even."

"You're going to drive us all into an early grave like this. We have plenty of time," I told him in my "I'm right" voice. The car's holoscreen played the news.

"...limit the alterations parents can choose. Supporters say our current beauty-over-health choices will bankrupt the healthcare system, while detractors say this legislation is unconstitutional and taking away the most fundamental choice parents can make."

Given how many people I'd heard about who wanted superficial things like height and Barbie bodies, I could see the side of the supporters.

More pain. Will finally put the car on auto-drive, minutes before we coasted lightly to the hospital – a regular one without hordes of threatening protesters.

Other mothers sat, waiting. I could only hope that we all had made the right decisions, the right alterations. Still, no sense worrying about it; I was about to have the baby.

But if the GCs started advertising beautiful babies, I'd go on strike.

"All this modern technology and still no way of beaming the baby out," I grumbled. The first thing the doctor asked me was if I wanted pain drugs.

Drugs were wonderful. I should have been in agony, but couldn't feel a twinge or any fuzzy-headedness. I felt perfectly healthy, for someone who had been awake for over a day now. Even the exhaustion wasn't so bad.

"What is this?" I asked, staring at what might have been Nazi propaganda, people talking about a master race, yet the master racism was being proclaimed in China, according to the hospital's holoscreen.

"Talking about how they're using gene altering technology, and it's supposed to be allele altering (this he shouted at the screen), to make the next generation in China smarter and stronger. Programmed evolution."

"Damn, better than going for beauty, but forcing everyone to make only those changes..." I trailed off as another contraction started.

"Well, they won't have to worry about population problems with them and all their neighbors choosing nothing but boys," said Will. "The best generation will be the last."

The hard clench of another contraction distracted me for a moment, but as Will's face turned tight with worry I said, "Fine, just fine. I can't feel a twinge of pain and the monitors," I waved a hand at half a dozen or so, including one showing a live image of the baby, "all indicate everything is fine."

"I'm a husband. I'm supposed to worry. Besides, it's...I've got no control over anything. It's all up to you and the only thing I can do is hold your hand. I want to help."

"Next time you can have the baby."

My water broke and the buyer's remorse struck harder. All through the delivery I prayed that nothing was messed up, and that our child would be healthy.

She was.

"See what you've brought into this world."

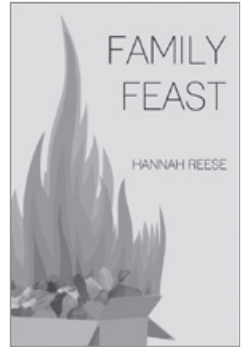
I saw my baby, plump and healthy and dark against the bright screen. I also saw one of those annoying infomercials playing above her head. "Design the perfect child! Give them the tools for success right from the start!" blared the commercial at top volume.

My daughter cried.



Family Feast

Hannah Reese



I took the parcel from the drone and smiled, tried to look thankful and happy so that anyone who might be watching wouldn't get suspicious. I opened the package and looked inside, knowing that none of the wondrous things within could go to use. I handed back the empty box from the day before and watched as the drone broke it down. Someone else would receive that box tomorrow.

Inside the recently delivered package was enough food to make any two people satisfied for a day – some fish, vegetables, bread, yogurt, and a small sweet were packed for my wife and me. The lettuce, a small amount meant as a sandwich topping, looked especially crisp and fresh.

My wife was sitting in the hut's single room when the delivery drone arrived; as soon as we heard the familiar whirl of its flight rotors, her face dropped. When I came back in to our little hut with the cardboard box, she was already waiting for me with matches.

I didn't want to do this again. I reached in the box and took out the fine, spotless, perfect meals. Everything in the box had been grown in the richest breadbaskets of the earth, delivered to my door by someone's solution to the food distribution problem. It grated against my being as I plucked out the vegetables from the box and dropped them into a metal bucket. The small amount of lighter fluid in the bottom of the bucket soaked into the food; it was already ruined, and there was

no reason to fret now. I still couldn't look as my wife lit the match and caught everything within the bucket aflame.

I rubbed my hands on the cotton t-shirt I was wearing – also a gift of the drones – and knew that all our sacrifices would be worth it in the end. I lifted my right hand to my mouth and bit the knuckle out of nervousness, out of the knowledge that we had eaten very little for the past week. It was just like the time before the drones started coming – except worse, because no one else was growing food. Trying to till and force things to grow in the desert wasn't worth it when bounties came from the sky.

My wife took the metal bin from the area in our hut from which smoke could rise, the ashes of the food blackened and dirty. She took the bin and shoved it out the back of the one-room hut, getting the stench away from the house. Upon returning, she put a hand on my shoulder. It was her little way of telling me that we were doing what we had to.

We sat down on the rug in the middle of the house – our only furniture – and thought about how to proceed. I lifted up the corner and looked at the hole we'd dug underneath. The pit contained all of the food we had scrounged for this adventure – hopefully enough to last one of us for several months if we stretched it. Without jobs or any hope of getting them, we could continue to hunt for food without having to worry about being fired.

I heard a knock on the post outside and quickly pulled the rug back over the hole. My wife scooted across the old rug and sat right next to the hole, to keep whomever it was from sitting on it, assuming they came in. I hurried to the door; it was too much of a coincidence that we'd just received and burned our daily delivery.

It was our elderly neighbor. He was wearing sandals, blue jeans, and a t-shirt, obvious gifts of the drones. Just a few years ago, these clothes would have made him seem a rich man, but now everyone had articles as fine as these. The solution to the distribution problem – as the drone delivery project was called – had increased the quality of billions of lives.

“Hello,” he said. I nodded back, hoping he would go away, but responded, “Hello; is there something you need?”

Our neighbor was nosy. He peeked around me, trying to peer into the hut, and seeing nothing but my wife and our rug, he seemed satisfied. If he’d seen our food stores, who knows what he’d have done.

“I was afraid your house was on fire...you don’t normally see smoke rising from a fire pit on a summer day,” the neighbor said.

I knew the man was lying. He was looking for our food reserves, looking to see if we were cultivating. He was old – he didn’t have anything to gain by not taking the gifts of the drones, but everything to lose if enough of our people stopped upholding our end of the bargain.

“We decided to grill our lunch vegetables,” I lied. “They were very delicious.”

The old man gave me a look. He knew what was really going on – he had to. Even if he was wrong, the risk of losing his daily delivery was too much. He was going to turn us in; we would be forced to start over.

“You’ll suffocate in the heat if you keep doing things this way. I suggest you stop grilling your food.” He turned around and started hobbling away. I watched as he left, then nonchalantly closed the door behind me.

As soon as it was closed, I looked my wife straight in the eye. She'd heard the conversation and knew what was going on – she was neither deaf nor stupid. I thought she was nearly in tears, from the way her face looked.

“We have to get rid of it,” I said. “The old fossil knows. We have to start over, try again in a few months or next year.” I went over to the carpet and took hold of the edges of it, urging her to get up. She didn't, though, but leaned across the carpet and put her hand on top of mine. Her slender fingers and thin hands felt so light, so weak on top of mine.

“I'm not waiting again,” she said. “It's been two years since we figured it out. We can't do this in the winter – we'll have nothing to gather and our food in storage won't last that long.” She lifted up the rug and removed the stores from underneath, piling them on top. “We can't do it this way. We should try running if we're dedicated at all. We don't have enough water to give up another time.”

I kind of wanted to give up in the face of the hardship that was coming, but I knew she was right. Not taking this risk meant we would lose.

I helped her tie the rug into a pack and slung it over my shoulder. It was the best I could do. She took some of the water we had saved from before the drone deliveries. It had sat behind some nearby huts for the longest time before we took it. With sanitary water so easy to come by, desalinated and delivered by drones, the dirty water that had once been so precious was no longer valuable. I took the rug outside and slung it onto our little two-wheeled, human-powered cart. She put the container of water into the cart and went back inside to get a second one. I followed her to retrieve the third and final container.

My wife took the rug and covered our bounty with it before she went to the street. There used to be children playing and laughing here, just ten years ago. Now the

streets were empty, save for the few people who were sitting outside their mud huts in the cool shade they created. My wife waved me on, a signal that people wouldn't be watching. I picked up the handles of the cart and pulled it forward, feeling the weight of the wagon as I forced it along the dirt road.

My wife and I waved and smiled at our neighbors, saying nothing as we walked past them. They couldn't hold us up – these first few minutes were the most important. If we could make it out of town, there was a chance they wouldn't chase us.

The roads were bumpier outside of town, though. I realized that people in a truck or even on foot would catch up with us pretty quickly. I jerked some scrub brush from the ground and gave it to my wife so she could wipe away our trail. It didn't work well, though; instead of the cart's tracks and our footprints, it looked like brushed dirt. Just a different trail for them to follow.

It didn't take long wandering into the desert for us to feel thirsty, for our hunger from skipping lunch earlier to catch up with us. We slowed down and were forced to hide under the cart next to some scrub brush due to the heat. I lay in the small space under the cart and looked at my wife, trying to appear more confident than I was.

After just a few hours, though, I heard what I least wanted to hear. It was a combustion engine. The engine grew louder as the vehicle it was moving drew closer. I held my wife's hand – we'd not made it far at all, had gained no benefit from our escape, and were still going to be caught. There was sand between us, the grit scraping my skin.

"I'm sorry," I told her. "I'm sorry." She said nothing, but looked at me with a sad smile. She knew that our flight and our attempt to thwart the drones was over. The fact that she had fought so hard for this but was now giving up – not that

there was any other choice – made me angry. I hadn't protected her well enough. I couldn't protect her from something that was killing us on the inside.

The truck stopped next to our cart. I looked out from under it and hoped that they would think we were dead and just drive away. The door to the truck opened and the boots of a GI Volunteer dropped to the ground. They were nice, thick boots, something that took money to buy. It had to be a Volunteer, couldn't be the local police.

The GI Volunteer stooped down, looked under the cart with a smile, and took off her sunglasses. Her face was smooth and her skin was that of a tanned white person. She smelled of sunblock and appeared to be in excellent health. Her necklace, created by the people of my tribe, sealed the deal – she was one of those do-gooders, one of those people who worked so hard to free us from hunger and thirst.

She was killing us.

"Mr. Francois," she said, "my name is Elizabeth; I'm here responding to your neighbor, who is worried that you're cultivating. What would I find if I were to look through the items in your cart?"

Her sweet voice gave no hint of the swift punishment that would come after – the punishment that, in a way, had already begun, had already been meted out.

"It's none of your business," I said. "And I won't give you permission to look."

"Mr. Francois...cultivation is my business. Food that isn't distributed equitably is my business." She reached her smooth, slender hands into the expensive leather satchel that she carried and withdrew a pamphlet, written in English. I reached my dirty hands out from under the cart and took it, looking at the all-too-familiar pictures.

People representing various races, ethnicities, and geographic locations were enjoying drone-delivered meals, all of the food delightfully fresh and healthy. I remember when I first saw the pamphlet several years ago – I jumped for joy. No longer would I be hungry. No longer would my wife have to suffer! We would have the luxuries of the West!

“I know what’s in your cart. I don’t have to look. But I will if you make me. Admit your mistake, hand the food over to me, and you and your wife can just go home and resume the delivery schedule,” she said, interrupting my perusal of the document.

“Then why don’t you admit your mistake first?” my wife asked. I looked at her in vain attempt to take what she’d said back, but it was not to be. “You never told us what was in that food. You never told us about the birth control drugs.”

“That was in the agreement your people signed. In order for the Breadbasket nations to meet the needs of the world and continue agriculture and food production sustainably, there must be a slowdown in population growth. The world cannot support more people. This was the only way to ensure compliance and prevent accidental pregnancies, all in one action.” She sat down on the dusty ground and continued, “The Global Initiative Volunteers are here to make sure that your rights to food, water, and clothing are protected. I can’t uphold my end of the bargain if you don’t uphold yours: to respect the rights of others throughout the world.”

“Then why am I being denied a child?” my wife asked. “It would have been better for us to be starving under the old system than to die with no children, no legacy, nothing.”

The volunteer removed her phone, a fancy piece of equipment with a touchscreen, and whizzed through the cascade of lights and text. She found what she was looking for.

“Mrs. Chantelle...if I remember correctly, you have never submitted an application to determine your genetic suitability. Mr. Francois hasn’t either, if my records are up to date. You should try the normal, legal route before you risk your entire village’s food supply by cultivating and withholding yourselves.”

She put away her phone and offered my wife her hand, then helped her out from under the cart. My wife held her face in both hands, tears flowing down her cheeks. She couldn’t hold it back any more; neither could I.

The Volunteer shook her head and offered her hand, which I slapped away. I refused to accept any of her niceties. She frowned. “Everyone has to take the same test to determine intelligence. Until we can identify the genes responsible and get faster DNA sequencing technologies, the paper test that looks for the intelligence phenotype is the best we can do.”

“But it’s not a fair test – I would have to pay to take a test that’s written in a language I don’t understand,” I said, angry at her for upsetting my wife – and for enforcing our childlessness.

“If you cannot pay the five dollar – excuse me, five thousand franc – cost of an application, we find your ability to fund a child lacking. It is our mission to improve everyone’s quality of life, even those who are not yet born. And besides, English is the de facto international language. Learning it is an invaluable skill; it could help you get a job.”

I crawled out from under my cart and stood up. I was so angry at her, so angry with her people and with what they’d done to us.

“I can’t get a job because I don’t know English, I can’t learn English because I don’t have a job to pay for lessons – don’t you see your test is unfair? Don’t you see that I can never pass, that I can never have children? I have to do this – we

have to run. It would have been better under the old system, even though we were hungry – at least we weren't forced to take poison!"

"The male birth control drugs are harmless to adults," the volunteer said, skirting the issue.

"But they're deadly to my people!" I cried. I put my hands to my face and fell to my knees, while the Volunteer looked at me with her smooth white face. She put her hand on my shoulder, trying to comfort me, but I shoved it away. I looked at the woman angrily. She was, right now, the face of my pain and all my agonies.

"All the world's people have to follow the same rules," she said.

"Then why do I only see pictures of North American and European children?"

She never answered. She sat and waited while I cried for some time, then began loading our food into the back of her truck. She left us there in the desert with our cart and enough of the untainted water to get us back to our village. She hadn't punished us, hadn't stopped our food deliveries, but she didn't need to. Her people had gotten their way, had paid for and passed their tests, were welcome to receive pure water and drug-free food.

I held my wife's hand and felt it shake. My family, our tribe, our people, and our nation – all of that was over.



Descent

Diya Basrai



The worst part is probably the phantom hunger pains, which occur sporadically throughout the day even though it's been almost a century since I last ate. I have a very clear memory of the last Oreo I'd had, the crunch of the cracker, the gooeyness of the cream, the musty chocolate smell. But other than the hunger pains, and the several other phantom pains associated with not having a body, my existence isn't bad. I guess the main redeeming factor is that I know I'm making the world better.

It began in 2065, when I was 29. While I don't like to brag, I was at the time (and probably still am) considered the smartest person alive. I was living as a bachelor in Los Angeles and reaping the rewards of my intellectual dominance. I was an idealist, convinced that through my intellect, I could use science to save an ailing world. So I spent my time creating revolutionary scientific breakthroughs to empower humanity. To name a few examples, I synthesized Apraxasaline, the first drug that eliminated the need for sleep, I eradicated the common cold, and my implementation of robots ended almost all blue-collar jobs in Los Angeles.

Most significantly, and now I realize ironically, I figured out a technique to keep a brain alive outside of a body. At the time, the practical applications seemed minimal: a brain without a body had no senses, the wearer would be incapacitated by the trauma of the switch, and although I created a way for the brain to communicate with the outside world, I still wrote this technique off as simply a novelty, a demonstration of the power of science.

It pains me to summarize my accomplishments with such brevity. I was smart, extremely smart, but the many, many hours I poured into my work cannot go unmentioned. It's been many years since that time, but the pain input required to fuel science still remains clear in my mind. I remember attempting to kill myself twice, maybe three times, but definitely at least twice.

One time, after an experiment failed, I leaped out my third story window and thankfully, but miraculously, landed unharmed. I vaguely remember after this incident thinking I was mandated by God to help the world, and no matter what, I would not be able to quit. I was, in a way, correct. I believe that the pain of my work, in a way, has made my current situation a little bit more bearable; if I enjoyed life more when I had my body, I probably would have gone crazy once I lost it.

A man's house burns down in an electrical fire. He did not attempt to save his family robot and it was destroyed in the fire. Should he be prosecuted?

It's hard to describe receiving a question, but I will try my best. In my current state, I have no sight, smell, touch, taste, or hearing. Everything that fills me, everything that is me, is my thoughts. All I can do is think. Communication with just a brain, a technique I myself invented almost 103 years ago, is extremely complicated, but in simpler terms, it is forcing a piece of information into the brain. Therefore, when they ask me a question, the question occupies my thoughtspace for a brief moment. It is terrible and painful. I exist solely through my thoughts, and when I get a question I lose my own thoughts: I am nothing for that brief moment. I communicate back by thinking in a concentrated manner; they can read the strongest electrical signals from my brain.

No.

I have never given any reasons for my decisions. I am, by tests of all sorts, the greatest mind that has ever existed, and therefore my answers are gospel. They never question me. Furthermore, my decisions have always been quite successful. I rule not only the city of Los Angeles, but all the cities in California. Nowadays, every decision in the city of Los Angeles, and probably in the next 100 years the world, will come from me.

I have a lot of time to think, and I've been thinking. Maybe I am God. I am all-knowing, and although I am technically blind, the amount of information they give me about the world makes me all-seeing. I make the judgments that decide the fate of the world because I am superior to all humanity. I am probably the closest thing to a God the world has ever experienced.

In 2065, I was frustrated and exhausted. I was conflicted with the idea of spending so much of my energy helping people. They were all selfish, intent only on reaping the resources of the present and ignoring the future. I thought that I was wasting my life on them; they were too stupid to appreciate my efforts. I felt that I was spending my life helping sheep.

I killed him on April 25, 2065. I was at a bar, the first and last one I ever went to. I did not drink any alcohol and I never have; I was there out of curiosity – to see, in my opinion, the scum of humankind. As I was leaving the bar to finish some of my experiments, a man, Robert Coleman, bumped into my shoulder. I smelled a bit of alcohol on him.

My lawyer always said I had a “five second angry.” That I was stressed out from my work and saw red. I did not. When I shot him with the nano-gun embedded in my ring – another one of my inventions, designed for use by hikers – I was

entirely lucid. I was not angry with him, I was not stressed, and I was clear-headed. He bumped into me, and then I shot him.

At that time, ever since the sharp increase in crime rates in 2015, the U.S., and especially Los Angeles, had employed an extremely strict justice system. Any felony could result in huge prison sentences, and I knew the moment my ring fired that I was finished. Actually, I knew before it happened, the second he bumped me, that I was finished. I was going to shoot him no matter what, and no one could convince me not to.

I don't know my motives behind shooting Robert Coleman. Even now. An important reason I was so successful was that I had strong intuition, and I knew that I had to shoot him. It was, looking back, illogical, even stupid, but I knew in my gut that it was necessary.

So I shot him and he collapsed. Except for the amber hole in his forehead, I could see no difference between now and when he was alive. In fact, I remember thinking that there was no difference between Robert Coleman in that moment and every other human alive at that time. Except for me.

When the police picked me up, I thought at the time that I was guaranteed life in prison. I knew the court case was in vain, and resigned myself to a life of people thinking that I went crazy in the end. I did not go crazy.

But the government of Los Angeles offered me an alternative. I would be put into a state where I would be physically harmless, but I would be put in a position where I could make decisions for Los Angeles. They said that I deserved to lead because I was the smartest. They wanted a leader who did not get there because of charisma, because of beauty, but because of pure intellect. I ignorantly agreed.

I think the main reason I agreed was that there was a certain thrill in testing out my own inventions. I would be the first one to use my brain removal technique.

I thought that if my life after losing my body were a success, it would be an affirmation of my intellect. Throughout my childhood I always enjoyed praise about my intelligence, but as an adult, I only cared about approval from me.

So I took it. I did the removal of my own brain myself, using a machine. It was very surreal, shutting down the parts of the brain that control the body, but still being conscious enough to work the machine.

So here I am, a 15-centimeter, three-pound lump of grey matter floating in a vat of concentrated fluids leading the cities of the future.

I'm not happy or sad. With a loss of your body, I guess, comes a loss of emotions. I am becoming more and more like a machine, a supercomputer in a vat making the correct decision. All the time.

I forget more and more, as the days go on. I can't remember breathing. I only remember the word, and that it was once essential to survival. What was it like to breathe? I've lost it, as I have many other feelings. Soon, I know that I will remember nothing of my body, and know only that I exist to provide the right answer.

I no longer have to think to answer questions. It's all intuition now. The right answer always comes to me, and I do not have to logically justify it, even in my own head. There is a right answer, and there is the wrong answer, and I only know the right answer. Every day I think less and less.

So I answer questions, and answer questions, and answer questions.

What I would do for one more Oreo.

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