The God Engine

by Ted Kosmatka

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You'll kill yourself at age thirteen—your first votive act, you'll call it in the note because you know only I will understand what you mean. And because you know how much it will hurt me to read it.

And they'll page me over the intercom during my meeting with physics, and I'll see you spread boneless out across the courtyard in reds and pinks, precious brain spilled like so much loose change on concrete, orderlies trying to resuscitate what doesn't even look like a boy anymore. And the report will state simply that the four-story fall was incompatible with human life. *Incompatible*, I'll think, saying the word over and over in my mind. *Incompatible.* And they'll bag you up, and mop you up, and there will be another meeting scheduled on just what went wrong this time.

At the long table the following day, I'll hold it in like it doesn't matter, choking on the words I don't say to the dozen important men. They'll sit with their eyes pointed at me, morning light spilling in behind them through wall-sized windows that look out across the vast grounds from a vantage exactly one floor below the one you jumped from, and I'll answer the suits about their money, and I'll answer the white-coats about possible undetected somatic recombination, and I'll answer the sweaters about their fucking Jungian revisionism and their conveniently postmortem prodromal phase diagnosis, and when John Sabrams mentions experimental confounds again, I'll try to take his head off with a reckless roundhouse that knocks him cold but leaves him breathing—and before I can remedy that detail, Stephen will tackle me from behind, and they'll all pile on while I scream, "Incompatible!" at the top of my lungs—kicking over leather boardroom chairs, face crushed to the light brown carpet while one eye notes the delicate upside-down parabola described by a falling sheet of paper.

But still, they'll say you're the crazy one.

* * * *

I concentrated on the feel of the road, the subtle vibration of the steering wheel in my hands. I tried very hard to blank my mind. Outside the car window, the hills were black under the weight of predawn purple. It had been a long night driving.

At the guard shanty, the face under the blue officer's hat was young, unfamiliar. He looked at me, my I.D., then back at me again. He squinted but finally gave the pass back and waved me though. I glanced briefly at the laminated card before replacing it in my wallet. No wonder, I thought. It was a younger man staring up at me from the plastic rectangle. Time for a new pass. How long had it been? Six years? Eight, I decided. The boy was eight years old now.

I was struck again by a wash of déjà vu as I pulled into the complex. The buildings never changed. The same gray brick, the same carefully manicured grounds. It looked like the campus square of a small university. But there would be only one student here. One very special student.

Dr. Sidaque met me in the lobby. His limp had gotten worse since the last time I'd seen him. Rheumatoid arthritis. His canted hand slid into mine for a firm shake.

"Welcome, Dr. Michaels," he said.

"How is the boy?" I asked.

"As well as can be expected. None of them do well the first couple of nights here, but we've done our best to make him comfortable. The adjustment can be difficult."

"The whole thing is difficult."

"Yes, well, it can't be helped. Would you like me to take you to your room?"

"I want to see the boy."

Dr. Sidaque led me through the building, and I was struck again by the familiarity of it all. Like I'd never left. "How much does he know?" I asked.

"The standard. There's been no deviation."

Of course. There were protocols. There was nothing left to chance, nothing the sociologists hadn't scripted out decades ago; and we all had our parts to play.

I followed Dr. Sidaque into the activity room. Only the carpet had changed. The boy's face was so familiar I almost didn't need to see it. Blonde, square-faced—the boy looked Dutch, or like my idea of what Dutch looked like. Growing up Lutheran in North Dakota, I'd seen a hundred similar faces staring out from between the pews of my childhood. His blue eyes wheeled toward me, and in them I found his true mark of distinction. They were eyes I'd spent most of my adult life looking into.

"Leave us," I told the caregivers.

The two women complied with a huff, gathering their clipboards and papers. They hadn't liked me last time, and the span of years had done nothing to temper their distaste. It had done something to me though. Yes, something to me.

This would be the last time for us all.

I descended to my creaking knees. “What are you building?” I asked.

“A spaceship,” the boy answered, looking up from his model. He had no fear of strangers. Not yet, anyway.

“Oh, a spaceship. That’s a fine ambition.”

“These are the wave-particle reactors,” the boy said, touching a pair of oblong struts that ran alongside the fuselage.

“You’re a special little boy,” I said. “Do you know that?”

“Yeah.”

I smiled at his modesty and then glanced toward the door to make sure no one was looking. The women were gone, the door shut. If there were cameras in the room, I couldn’t see them. I leaned forward, putting my mouth close to the boy’s ear, and then I said the first thing ever uttered to him that hadn’t been written by sociologists and approved by the board. “Our time is short, little one.” I said. “I’m dying.”

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You’ll kill yourself at age seventeen, when the voices start. Always such an inventive child, and you’ll eat the extract of a plant endemic to the project grounds—we’ll never really learn which one. It’ll be your own special concoction though, condensed and purified in the chemistry room, a subtle, chalky poison you’ll spread over your dinner like salt. It will not be a painless death, and afterward, botanists will be called in to clear away flora that might be dangerous. They’ll favor Kentucky blue grass, and it will be laid in a carpet from fence to fence within the grounds to the full exclusion of other species. It’s hard to kill yourself with Kentucky blue, they’ll reason correctly.

You’ll love that grass.

You’ll do polynomials by age eight. Permutations of Avogadro’s number by eleven. By twelve, you’ll have tackled Poincare geometry. They’ll teach you biology, history, economics—you’ll read the classics. All in an attempt to round you out, keep you sane, because they learned early on that an emphasis on mathematics, to the exclusion of other disciplines, only speeds the process. By seventeen, just before the voices start, you’ll begin working on the problem of the tacke drive. The physicists will move into the complex full-time. The team will work around the clock, going over your formulas. One of them will go mad, and the psychologists will study that for years—how you could do that to him with just numbers.

You’ll never make love to anyone. You’ll never cry. They’ll find you after the poisoning, writhing in a pool of your own vomit, eyes rolled back in your head, precious mind already baking in a hundred and seven degree fever, leaving, like so

many other versions of you, the formulas incomplete.

* * * *

“What do you call this one?” I asked the boy. He had turned six today. We’d eaten cake and ice cream earlier, and now he wanted to show me what he’d been working on in the lab.

“I haven’t named it,” the boy said.

“Why not?”

“I don’t know,” he said.

The *Drosophila* clung to the inside of the test tube, walking busy little circles on the glass. Blue nutrient auger carpeted the bottom, a thick porous sponge sealing the top as a lid.

“What’s the mutation combination?” I asked.

“White eyes, vestigial wings, yellow body.”

“Those are good ones.”

“At least they’re visible,” the boy said and held the test tube up to the light for closer inspection. His blue eyes narrowed in concentration. “I was working with a line that had a variant vein structure in the wings, and I had to put them under the microscope to identify the phenotype. I used ether to sedate them. Too little ether, and they’d wake up before I was done and fly away. Too much, and I’d kill them.”

“Dead fruit flies can be a problem,” I said.

“The bigger problem was when the ether didn’t kill them, but *sterilized* them. I’d spend days working out breeding programs and doing set-up on flies that weren’t going to reproduce. By the time I realized they were sterile, I’d wasted half a week.”

“But these are different?”

“Yeah, ether toxicity isn’t a problem. In fact, I don’t need to use ether at all, because I don’t need a microscope to identify phenotype. The mutations are easy to see. White eyes, vestigial wings, yellow body—what you see is what you get.”

“What you see is what you get?” I said, tapping a finger on the test tube. “If you believe that, little one, then you’ve still got a lot to learn about genetics.”

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You’ll make a breakthrough at age nineteen, adding a full line to the original formula. The future will seem to bloom before us, the final solution just around the next corner. The celebrations in the complex will last for days, and the suits will pass out cigars like new fathers. *Cuckolds*, I’ll think to myself.

You'll call me in the middle of the night, and I'll meet you in your study. You'll be naked, crying, tearing out page after page from your library, and I'll know it's over. I'll know.

You'll tell me you can see angels. You'll tell me that Calvin was right, and I'll spend three sleepless nights trying to remember if I told you I was Lutheran.

They'll give you clozapine to ease the symptoms. "Wooden," you'll say to me, crying again—and on the drugs you won't be able to manage so much as a quadratic equation. "My head feels wooden."

And that's the irony, isn't it? The drugs which leash you to reality will prevent you from working your math. Your magic.

You'll forget your name sometimes. You'll forget to eat. You'll walk the corridors in superheated manias, occasionally scrawling mathematical hieroglyphics across the walls in red magic marker. You'll put the solutions on doors, looking for that rapture of stepping through to the other side—a symbolic gesture. The teams will take to calling it your graffiti, but each mural will be photographed before it's painted over, and mathematicians will go over the formulas meticulously looking for hints of rationality. Increasingly, rationality and your formulas will have less in common with each other, until finally the archaic runes you scribble will carry meaning only in your mind. You'll drift further away from this world into your own.

Until finally nothing reaches you at all.

* * * *

"Dental X-rays." I answered.

"For what?" the boy asked.

"For your third front tooth."

"What do you mean?" the boy said, probing the gap with his tongue. His top two front teeth were missing.

"You've got what's called a mesiodens, an un-erupted central incisor."

"My gums feel fine. How do you know I have it?"

"You usually do."

"What causes it?"

"Genetics. It's not all that rare. About one percent of people have supernumerary teeth of some kind. It happens."

"So I'm going to have an extra tooth?"

"Probably," I said.

“But maybe not,” the boy said slowly.

“There’s not a one-to-one association between gene and expression. Sometimes, instead of a mesiodens, it expresses as extra cusps on the back of your top teeth—what’s known as ‘talon teeth’ because they look like an eagle’s claw. Sometimes in identical twins, one twin will have the extra cusps, and the other will have the extra tooth. Same genes, different expression. The trait doesn’t have a particularly high concordance rate. You don’t have talon teeth though, so now we need to do x-rays to see how things are arranged in your gums.”

“What will they do for it?”

“Surgery, probably, unless the tooth is posterior enough to allow both normal incisors to erupt.”

“I still don’t understand.”

“The gene doesn’t really cause a third front tooth. It’s more accurate to say the gene causes certain developmental disruptions in the mesenchyme that affects the dental lamina in complex ways. Usually though, that’s an extra tooth.”

“I don’t want surgery.”

“I don’t blame you. It all depends how everything is arranged in your gums.”

“If it’s the same genes, why would it be different each time?”

“Oh, John, that is the question, isn’t it? That is the question.”

* * * *

You’re left-handed, usually. The lefties have more problems. Emotional problems. Memory problems. They are also the more gifted. The original John was left-handed.

You don’t like milk. You don’t sleep well. Your IQ ranges between 126 and 132, which is high but doesn’t explain what you’re able to do with numbers. It doesn’t explain the tacke drive.

Your fingerprints differ each time, as does the rotation of the cowlick in your hair. You always have freckles, but the pattern changes. Very often, but not always, you have a mole on your cheek.

Seventy-two out of ninety-seven times you ended up as so much dissolution in nutrient media—having ceased dividing before the blastocyst stage. Other times you failed to implant. Once, you were a miscarriage, a corruption of the process, a monster.

Those versions of you who remained were blonde, blue-eyed, square-faced—Dutch looking. Or my idea of it. Every time.

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The boy woke up crying and puking in the recovery room. I held him and rocked him until his tears subsided into a slow series of hitches. He moaned.

When I thought he'd gone back to sleep, I tried to lay him down, and he clutched at me, crying again. He wanted to be held. His mouth was stuffed with gauze, and he tried to take it out. I stopped him. When I tucked it back under his upper lip, I got a look at the wound—dark hamburger and stitches. The mesiodens had been most unfortunately positioned. It had been necessary to remove most of his maxillary baby teeth. Poor kid.

The moaning started again. Holding him like this, he was no different than any other hurt child. Pain is the ultimate equalizer.

I'd comforted so many before him just like this. He would be the last.

"Hurts," he moaned, his breath fetid and sick.

"Shhh, don't talk, little one. Don't say anything. Go to sleep."

The boy continued to moan, but his eyes remained closed. I bent closer, and his left hand reached for mine. I kissed him softly on the forehead.

"I love you," I said.

* * * *

The next few days were hard on the boy, and he lost weight. I brought him ice cream, but he barely touched it.

On the third morning I found him standing at the window looking out over the courtyard. Cement and Kentucky blue. My skin crawled.

His eyes were sad when he looked at me. They were eyes older than his ten-year-old face. Most of my hair had fallen out from the treatments, and I wondered how I must look to him: a thin, balding old man. He turned back toward the window.

I put my hand on his shoulder and felt the bones beneath his skin. I followed his gaze out the window at the gathering dusk. Beyond the glass, the sunset lay buried in a dark bank of cloud, shadows deepening between the dark hills in the distance. It struck me as oddly familiar, like a face seen on a father, and then a son. "November skies of lead and gray," I whispered.

"What?" the boy asked.

"A poem," I said. "Something I remember from ... somewhere. November skies of lead and gray, I love this dying of the day."

On the hills, dark trees swayed in the wind, undulating like a living thing.

"Where do you go when you die?" the boy asked.

“I don’t know.”

“Do you believe in God?”

“Almost every day.”

“What do you believe most about him?”

I looked closely at the boy. “That he sticks his finger into the mind of every child conceived, and gives one good counterclockwise swirl.”

“What do you mean?”

“I mean there are mysteries still. Unknowable things.”

“I don’t want you to die,” the boy said.

“We all must die, little one. We’re each given only so much time.”

“Not all of us.”

“All of us.”

“No,” the boy shook his head. “Some of us get extra.” The boy’s eyes changed. “Who was he?” he asked. His voice was odd.

I realized who he meant. Who he had to mean.

“He was a scientist,” I said. “A physicist by training, but the media called him a mathemagician. Ultimately, he was a singularity.”

“And he invented something,” the boy said.

“It would be more accurate to say he half-invented it.”

“What was it?”

“It had many names, but he called it the tacke drive. Some physicists still call it the god engine, and it was supposed to take humanity to the stars.”

“Was he a great man?”

“He was.”

“Will I be great, too?”

“No, little one, you will not.”

The boy turned back to the window. The sky had completely darkened before he spoke again. “But I am him.”

“You are yourself,” I said.

* * * *

“Mathematics is metaphor,” you’ll tell me. It will be something I have heard before, in those exact words, in that exact tone—and so I’ll listen carefully to what you have to say, searching for concordance here, too, and you’ll rub the teenage acne on your chin, pacing in front of the blackboard. “But this is real,” you’ll say. “This is testable.”

You’ll pick up the chalk, pointing to the schematic you’ve drawn—a thing of wonderful, opaque beauty. It could be art, or science. I won’t be able to tell.

“The local space immediate to any antenna is subject to both wave-physics and circuit physics,” you’ll begin. “But tucked between the near-field and far-field maths is a tract of scientific real estate that hasn’t been so systematically explored.”

You’ll speak quickly, excited by what you are revealing. Your mention of an antenna will worry me, though, because antennas are a common fixation among the disturbed. I’ll wonder if you’re hearing voices already.

“Tesla didn’t follow his work through to its obvious conclusion,” you’ll say. “Maybe he didn’t fully comprehend the underlying physics, but then how could he? Quantum mechanics, as it now stands, tells us that a resonant atom acts as if expanded to the area of its entire near-field region when viewed in terms of its function as a half-wave antenna. This is accomplished by the accumulation of a virtual-photoelectric field. Do you understand?”

I’ll nod.

“It’s well documented that atoms disperse half the light they contact,” you’ll continue. “But what about the other half? When atoms resonateselectromagnetically at a frequency identical to the incident light waves, then the atom’s oscillating field will store the attendant EM energy. And when this field is phase-locked with the incoming light, the atom’s field will cancel most near-field E. That energy doesn’t disappear; Einstein proved that. Instead it’s stored up inside the atom. Thus, tiny atoms can pull energy from huge undulating light waves.”

“You lost me,” I’ll say.

But you won’t even slow for breath. You’ll push forward, rushing to get it all out. “And the really strange things start happening when you apply this to Beaty’s work on coupled-resonator theory. His quantum mechanical coherent systems could almost be thought to analogize atom photon transfer.” Your hair will fly around your head as you turn back to the blackboard, pointing again with the chalk. “Taking this into account, he’s already theorized it might be possible to increase transmitter modulation beyond the carrier frequency. You could receive a signal at the resonator without the use of radio transmissions.”

“Radio?” I’ll say, wondering if I missed the shift in subject.

“But the fascinating thing, the incredible thing,” you’ll tap the chalk on the

board. “Is what would happen if, after such a circuit were oscillating, the transmitter were removed from the loop. The atoms within the near-field would no longer be able to radiate the incoming waves, and if the transmission happened to intersect the field of a small antenna—in other words, some mass of molecularly aligned atoms phase-locked to incoming long waves—then logic requires the antenna change from oscillation to effluxion. Instead of absorbing E, it would periodically discharge. It might be possible to construct a heat source from such principles.”

“A heat source,” I’ll say.

“Or a simple propulsion source,” you’ll say. “Or a bomb.”

“From mere light,” I’ll say.

“And atomic resonance.”

When I leave, I’ll be unsure what to think. I’ll shut your study door softly behind me and walk to my room. That night the physicists will look at your schematic, and they won’t dismiss it out of hand as I expect. They’ll photograph the blackboard. A team will spend a week crunching the numbers before giving up with a collective shrug, saying they needed more data. “We have no idea if he’s right,” they’ll say. “Maybe in another century we’ll have the technology to test it.”

The next time I see you, you’ll be in your underwear, sweating in front of the same blackboard, mania burning in your eyes.

“What is this?” I’ll ask, pointing at the mathematical symbols. The old schematic is gone, erased, supplanted by something more purely mathematical.

“A proof,” you’ll say.

“What kind?”

“It’s a proof of God’s existence.”

“That’s a worthy ambition,” I’ll say. I will pull a chair out from a table. I will sit. I will wipe my eyes with my handkerchief.

But for all my sadness, this new work, too, will be taken seriously by the teams.

“It’s brilliant,” Mike Sebrams will tell me the following day, once his mathematicians have had their time.

I’ll wave that off. “Do you think it is useful?” I’ll ask.

“No, I said brilliant, but the work is self-referential. It proves itself, given itself, through eighteen steps. But, given that God exists,” he’ll say. “I have no doubt that this is *how* he would exist.”

* * * *

The boy's left hand slid into mine. His blue eyes brimmed with tears, and when he blinked, they fell in twin bursts down his cheeks. This time, I was the sick one needing comfort.

The hospital room smelled of antiseptic, and death. Or perhaps the latter was my imagination, just me getting ahead of myself again. Lately, it had sometimes been difficult for me to tell where I was, *when* I was. Things had begun to blur; but now, here in this bed, looking up at the boy, there was no mistaking that our time together was coming to a close.

I tried to sit up but the pain was too much. My throat was sore from all the talking. Hours of talking.

"Why are you telling me all these things?" the boy asked.

"Because I love you," I said. "And because I'm tired of knowing things about you which you do not."

"These stories cannot all be true."

"They all happened, each one. A catalogue of your possible futures. You're the youngest, and you will be the last."

"Why I am the last? Because you are sick?"

"No, because the experiment is a failure."

"What am I going to do without you?" he said.

"I don't know. That will be something new. I have always been here, each time. I don't know what will happen."

"But you seem to know everything."

"Not everything." I touched his forehead, swiping away a blonde lock. "Only the unimportant things. The small things."

"And the big things?"

"We're just learning to ask the right questions."

"Then I have a question," the boy said. He wiped his eyes with the back of his hand.

"A big one?"

"Who are you?" the boy said. "To me. Who are you to me?"

I sighed. Not just a question then, but *the* question, finally. I took a deep breath. "In all the ways that matter, I am your father," I said. "And in all the ways that don't, I am your son."

“I don’t understand.”

“We’re kin, you and I. I knew you suspected.”

“Are we...”

“No,” I said. “Not the same, you and I. Not like you and the others. There was a girl at Stanford sixty-eight years ago. She was young. She was in love. And there was a young physicist, not yet sick, already making his mark on the world. By the time I was born he’d ... I never got to meet my father. He never held me. But I’ve held him now, versions of him, dozens of times.”

“You’re saying ... I am your father?” There was horror in his voice.

“It is semantics,” I said, shaking my head. “We have half our genes in common, like any father and any son, and I don’t think it matters which of us possesses the ancestral set, and which the descendant. It is enough to say our genes have a common source. Water doesn’t care which way the river flows, only that it reaches the sea.”

“What will I do now, without you?” the boy asked.

I clenched his small hand tightly. “You have a mind like a detonation, little one.”

“You are my only friend,” he said.

“And that is why I’m telling you this,” I said. “Your time is limited, like mine is limited. That is my gift to you. This knowledge. You only have a few more years. Don’t waste it on formulas. My gift to you is yourself.”