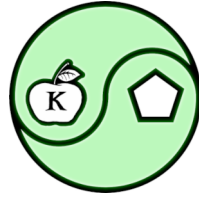


midnight's simulacra

Gold & Appel Publishing



DEDICATED

**to all those of whom i am proud,
and those who will one day get there.**

midnight's simulacra

copyright © 2024 nick black—all rights reserved

cover by nick black and justin barker

illustrations by justin barker

isbn: 979-8-9895236-1-0 (trade/paper form factor)

version 1.1.6 released 2025-02-28 (first edition: 2024-01-11)

Library of Congress Control Number: 2023922340

This book is fiction. Any similarity to actual persons, living or dead, is coincidental.

Bibliography/errata available at <https://midnightssimulacra.com>.

Created on a Debian Linux workstation using exclusively Free Software (git, Vim, LuaTeX, Memoir, GNU Make, polyglossia, CircuiTikZ, PyMOL, and GIMP) and free fonts (Gentium Book Plus, Kanit, Noto, Hack, and Symbola).

Alexander's Horned Sphere © Cameron Browne. Used with permission.

Sylvia Plath, "Lady Lazarus" from *The Collected Poems* © 1960, 1965, 1971, 1981 the Estate of Sylvia Plath. Used by permission of HarperCollins Publishers.

Jorge Luis Borges, *Selected Non-fictions* © 1999 Viking.

David Foster Wallace, *Infinite Jest* © 1996 David Foster Wallace.

Cormac McCarthy, *Blood Meridian* © 1985 Cormac McCarthy.

William Gibson, *Neuromancer* © 1984 William Gibson.

Primo Levi, *The Periodic Table* © 1975, 1984 Primo Levi.

Thomas Pynchon, *Gravity's Rainbow* © 1973 Thomas Pynchon.

Richard Adams, *Watership Down* © 1972 Rex Collings Ltd.

Tom Wolfe, *The Electric Kool-Aid Acid Test* © 1968 Tom Wolfe.

Albert Camus, *Notebooks 1942-1951* © 1965 Alfred A. Knopf, Inc.

Malaclypse the Younger, *Principia Discordia* © 1963 Greg Hill & Kerry Thornley.

William S. Burroughs, *Naked Lunch* © 1959, 1990 William S. Burroughs.

Aleister Crowley, *The Spirit of Solitude* © 1929 Mandrake Press.

Languages include English, Nahuatl, Deutsch, Polski, Italiano, Filipino, Latīnum, Español, Magyar, Français, Shqip, Cymraeg, Lingála, Yorùbá, čeština, Lietuvių, Việt, Norrónt mál, русский, українська, қазақша, беларуская, Ἀττική Ἑλληνική, Ελληνικά, فارسی, مازندرانی, العربية, ગુજરાતી, தமிழ், ஸாண்டாவா, ਪਾਕਿ, සිංහල, བོད་སྐད་, संस्कृतम्, हिन्दी, မြန်မာစာ, ភាសាខ្មែរ, 官話, 日本語, 한국어, C++, technical argot, and mathematics.

midnight's simulacra

a novel by nick black

invocation	iii
prolegomenon	iv
I <i>verwirrung</i>—CHAOS	1
1 coming of age in confusion	3
2 sherman katz gets himself expelled	23
3 michael bolaño indulges in small pleasures	44
4 elephant seals	66
II <i>zweitracht</i>—DISCORD	89
5 devesh choudhary is all about physics and rolls	91
6 <i>atrium vestae</i>	114
7 y'all've any more of that vee-cee?	130
8 alexei orshanskiy thinks he can get you lemons	144
9 pavlov's hierophant and schrödinger's hæresiarch	156
10 vladimir cel tredat takes up a collection	169
11 ergot	182
12 welcome to my lab; we've got <i>Taq</i> polymerase	193
III <i>unordnung</i>—CONFUSION	213
13 cloud wandered lonely as a daffodil	215
14 max-cashflow min-cut theorem	233
15 if you eat that i think it is going to kill you	254
16 erica marelli grows tired of bivalves	263
17 anarbek tursyn busts a move	285
18 the chemical history of an eightball	295
19 uranium	305

IV <i>beamtenherrschaft</i>—BUREAUCRACY	312
20 greg moyer gives some bad advice	314
21 a stamped-in network of paths	330
22 overall there is a smell of fried onions	372
23 vancouver! vancouver! this is it!	390
24 it'll raise the tone of your trap	399
25 oriana marino speaks in riddles	411
26 feedback loops are Bad Shit, to be Avoided	431
27 my mistakes are many, but less terrible than god's	444
V <i>grummet</i>—AFTERMATH	448
28 usurper	449
29 <i>prima luce</i>	462
epilogue	474
<i>tē kallistē</i>	
the author	
the illustrator	

illustrations by justin barker

jenseits von gut und böse (<i>beyond good and evil</i>)	2
mémoires d'outre-tombe (<i>memoirs from beyond the grave</i>)	22
the thirst for annihilation	43
the age of innocence	65
without MSG i am nothing	90
the yellow wallpaper	113
unfair arguments with existence	143
fanged noumena	168
le rouge et le noir (<i>the red and the black</i>)	192
their eyes were watching god	214
le sens du combat (<i>the art of struggle</i>)	262
to the lighthouse	284
el jardín de senderos que se bifurcan (<i>the garden of forking paths</i>)	294
auch zwerge haben klein angefangen (<i>even dwarfs started small</i>)	313
war in the age of intelligent machines	329
angle of repose	389
le dieu du carnage (<i>god of carnage</i>)	461
a mathematical theory of communication	473

invocation

This one's for everyone out there building the future, everyone working to constrain entropy, everyone putting in the hours, creating something neither banal, nor evil, nor wasteful, nor broken. Keep fighting the good fight.

Arma virumque cano: I sing of engineers and all their nerd shit. I hope to shine a little light on my tribe. Faithfully doing so requires a measure of the recondite, a dash of the esoteric. *midnight's simulacra* can be a nontrivial read.

Should you find yourself frustrated, put the book down. Breathe. Step outside. Smoke 'em if you've got 'em. Look up any offending concepts, if you'd like. Nothing here is beyond the understanding of a motivated high schooler. If you're not feeling a research break, bathe in a river of atramental enigma: allow the unknown to wash over you; try to enjoy the sense of mystery. Skip a few para. We all do it. Reject shame and burden both. Trudge on and find your footing—it'll come along more quickly than you might expect. I've provided expansions for acronyms and cursory translations of non-English phrases, of which there are admittedly quite a few.

You can do anything to which you put your mind (except *e.g.* design a procedure to determine whether an arbitrary Turing machine T halts, simultaneously measure canonically conjugate variables of a quantum system such that the product of errors is less than half \hbar , or create a complete and consistent set of recursively enumerable axioms capable of deciding PA—duh). Proof is left as an exercise for the reader. I apologize for nothing.

Metric prefixes ought be interpreted as such: in the spirit of Herman Kahn, a “megadose” is “one million doses,” not “a large dose.” If you don't like it, I encourage you to FAX your representative, or mail the Management at:

nick black
International Court of Justice
Peace Palace
Carnegieplein 2
2517 KJ The Hague
The Netherlands

Arma virumque cano: I sing of arms and of a man. Virgil, *Aeneid* I.1
PA: Peano arithmetic

prolegomenon

All very well to talk about having a monster by the tail, but do you think we'd've had the Rocket if someone, some specific somebody with a name and a penis hadn't wanted to chuck a ton of Amatol 300 miles and blow up a block full of civilians? Go ahead, capitalize the T on technology, deify it if it'll make you feel less responsible—

Thomas Pynchon, *Gravity's Rainbow* (1973)

What follows is a work of fiction, a modern alchemic fantasy, a phantasmagoria. Neither characters nor events are based on real people, to whatever degree that assertion is possibly true, or even semantically well-defined.

Standard advice is to Write About What One Knows. I know the experience of America's top-tier Technical Institutes, concentrating unlike anywhere else in the world madness, brilliance, and youth of blistering eccentricity. I know likewise sociopathy, ambition, and crime. The allure of the forbidden. The call of the clandestine. The formidable, almost sorcerous powers available to that *rara avis*, the competent rogue engineer.

The science explored herein is, to the best of my ability, absolutely rigorous and reproducible—the biology, chemistry, and physics of *midnight's simulacra* are those of our universe as I know it. The characters are of course sometimes misinformed, or mendacious, or simply running their ignorant goddamned mouths, but Nature cannot be fooled.

Information wants to be free, and I sought to spin a unique and compelling story. This book was not written to encourage the manufacture of substituted tryptamines, nor the enrichment of fissile actinide isotopes, nor the broad penetration and subversion of computing resources.

But a fish is gonna swim.

Let us go, then, you and I—into the light, and into also the very dark. *Lux fiat—une oasis d'horreur dans un désert d'ennui!*

May God forgive us. May history judge us charitably.

Lux fiat: Let there be light. Genesis 1:3

une...d'ennui: an oasis of horror in a desert of boredom. Charles Baudelaire, *Les Fleurs du mal* (The Flowers of Evil, 1857) "Le Voyage" (The Voyage) VII.4

Part I

verwirrung—CHAOS

All is not lost; the unconquerable Will,
And study of revenge, immortal hate,
And courage never to submit or yield:
And what is else not to be overcome?
That glory never shall his wrath or might
Extort from me.

John Milton, *Paradise Lost* (1667) Book I 106–111

Whatever exists, he said. Whatever in creation exists without my
knowledge exists without my consent.

Cormac McCarthy, *Blood Meridian* (1985)

And Lo, for the Earth was empty of Form, and void.
And Darkness was all over the Face of the Deep.
And We said: “Look at that fucker Dance.”

David Foster Wallace, *Infinite Jest* (1996)

SPAKE ERIS: I am chaos. I am alive, and I tell you that you are free.

Malaclypse the Younger, *Principia Discordia* (1963)



1 coming of age in confusion

When they met in his dreams—and they came there all too often of late—the two agents—phantasms? visions? possibly theophanies?—took the forms of Teddy Roosevelt and Jodie Foster. They stood in huddled proximity at the long edge of the National Mall's reflecting pool. Teddy ate with zest hard Hanover pretzels, briefly examining each through his monocle, discarding those that failed muster. His supply seemed quite bottomless. Baked dough fractured crazily between the legendary incisors. Beneath his breadfall feasted pigeons.

Roosevelt: In 1886, as Billings County Deputy Sheriff in what was not yet nicknamed the Roughrider State, I tracked three boat thieves from Elkhorn Ranch fifty leagues along the Little Missouri River, subdued them, bound them, and marched them to Dickinson. We'll have this Katz and his confederates.

Foster: I doubt they know we picked up on it at Savannah. Followed that shipment all the way along I-16 to I-75. Hundreds of miles up highways that snake through the south like main circuits plugged straight into Katz.

Roosevelt: I prefer rail, or a good river patrol boat.

Foster: So long as it's not a cruiser in Havana.

They suggested to Sherman Katz the two Witnesses of Revelation 11. Terribly well informed, high-numinous in their access to cross-organization, transbudget facts, exact affiliations and portfolios were yet unclear: they wore neither recognizable uniform nor insignia, but rather gray glen plaid flannel in clinging Malibu Imperial cuts, aping unmistakably Paul Reubens as Pee-Wee Herman.

Foster, then, epitomized what Hobson called an "incomplete cognition," and Blechner an "interobject": one of the world's most intimidating women, clothed via dream as the world's most childish man. On Roosevelt's bull moose neck the red bow tie looked obscene. Every trapped fidget unleashed complex systems of undulation and vermicular bulge. Three spatial dimensions of suit seemed insufficient, oversubscribed. It was mesmerizing and foul and Sherman—no friend to that which crawls along the ground, whether on its belly or many feet, nor swarming things that swarm the earth, and absolutely not *Gastropoda*, neither those sporting toxoglossate radulae nor those that gummed you in the gummy way of the cyclostomatous worldwide (and holy shit, there are *Conidae* that launch barbed radulae at you, like someone gave goddamn Queequeg access to neurotoxins)—the next morning regarded the whole Pee-Wee thing as incongruous and, like, undeserved.

Roosevelt made sense: he'd read Edmund Morris's three volumes of biography twice in his twenties, and adored the man of the arena ever since. *Silence of the Lambs* ranked among his top ten movies easily; *The Accused* was right up there. But he'd not been allowed to watch Pee-Wee's *Playhouse*. Not that he'd particularly cared to—once *Muppet Babies* ended at 0930h, young Sherman knew of nothing worth viewing until the next week's episode. Over breakfast in 1991, eleven years old, his mother had interrupted the silence to declare "*Pee-Wee's Playhouse* is a thinly disguised invitation to pederasty. Right CJ?"

Cassius Julius Katz's presence at breakfast was infrequent, and that day unexpected. "Conspiracy to pederasty, perhaps, Evy, certainly."

Satisfied, she continued. "And that's why the Catholic Church likes it."

Sherman doubted any correlation between Catholicism and Saturday mornings on CBS. Months prior he'd agreed to some protracted viewing at the urging of his friend Richard. Eveline came in on an early, loquacious drunk, pointing at the television with squinting accusation. "That chair's speech is blasphemy."

Richard, slow on the uptake and confused already, looked to Sherman.

"Genesis 1:29—I have given you dominion over all the animals and seed-bearing plants."

Katz sighed.

"Genesis 1:30—And the animals can eat the plants. Nothing about couches. Every word from that sofa is a mockery."

Richard's mouth hung open.

"Can a couch give glory to God, Sherman?"

"No." His voice was resigned.

"Can it lift up its voice in jubilation? Was it made in His image?" She stumbled to the control panel, appraising it with mute, disgusted confusion, and finally unplugged the offending appliance. "Go play outside. I won't have you anthroposophizing the living room."

"I think you mean anthropomorphizing?"

"I mean anthroposophize. Anthroposophy. The Nazis did it. Tried to make super demon soldiers for Hitler. Dark witchcraft. You think you're so smart? You don't know nothin'." Richard stopped dropping by after that.

Back to breakfast: "He looks like a Communist and all the homos are Communists. I've got no problem with gay people. They've got real trouble with the AIDS." She crossed herself. "But if you're gonna be a pederast it's gross that you're doing it with little boys." This proclamation's unsettling implications elicited no comment. Some stones are best left unturned in their mosses, a lesson quickly internalized at the table Katz. Her first comments merited a question yet. "What do you mean about the Catholics, mom?"

"Those poor priests are all pederasts. It's not their fault. The Church won't let them lay with women. It's unnatural. They would just be homos, but that's a sin. So they have altar boys."

His father didn't look up. "Evy, that's enough."

"But aren't we Catholic?"

"Of course we're Catholic. Do you need to go to more Mass?"

"Well then isn't it sinful to say they're humping the altar boys? Or if they are, aren't they sinning? And why are we chanting responsorial psalms and doxologies with a clergy that you suspect to be systematically humping or"—nodding here to his father—"conspiring at least to hump altar boys? Dear God, didn't you say I have to be an altar boy when I turn twelve?"

"Don't say 'hump.' That's what camels have. Well, if they try to get fresh with you, you smack their hand away and tell them 'No, Father, you go try that with that Nathan boy from your CCD class, he'd probably like it.'"

Aghast: "How about a church without altar boys? Holy shit mom!"

“Sherman Spartacus! Language! I have been a Catholic all my life. It’s a wonderful faith, God’s chosen faith. One holy Catholic and apostolic church. How many times have you heard us say that? All the way back to Jesus and Peter, one long line of Popes just like those New England Jews tracing their families back to the *Mayflower*. You want to be a Baptist? You think Jesus manifested Himself to the French? You’ve been a Catholic eleven years. For nine months before that you were inside me and that counts as Catholic too. I have your baptismal candle in our safety deposit box. Your father will be a Catholic soon. Why in the world would we stop being Catholic? What would your grandparents say?” She’d arrived through passion to the verge of tears.

Sherman wasn’t sure about the Frenchman thing, whether she thought Providence’s Roger Williams some kind of confused Huguenot or Charlemagne the first Baptist or what exactly. It had come up before. Mentioning the Western Schism or the seven antipopes of Avignon would only annoy her. His father had silently winced at the absurdity of *Mayflower* Jewry and Sherman hoped desperately that she would not expand upon this theme.

“You mean your parents, right? I don’t think Dad’s would care.”

Cassius grinned at this behind his coffee.

* * * * *

Elijah Katz and Mildred Bickers of Jacksonville were blessed with Cassius Julius in 1950. Three quarters of a century before this happy birth, Moses Elias Katz was delivered in the Mellah of Fez to Leopold and Freida, Ashkenazim out of Prussia. Their emigration from Europe had been arranged by the *Alliance Israélite Universelle* with the intention that Leopold would lecture in Morocco. A united Germany wrote Jewish emancipation into the *Bismarcksche Reichsverfassung* of 1871; Freida’s native Württemberg had granted general equality in 1861. They’d nonetheless seen the angry holdouts (especially in Bavaria), read the vituperative counterpoints in the goyim papers, and grown up hearing about the Hep-Hep riots. The revolutions of 1848 had been good to European Jewry, but before their time, while both possessed clear memories of Edgardo Mortara’s kidnapping in Bologna and the complicity of Pius IX.

Between the Rif mountains Dersa and Ghorghiz nestles Morocco’s Martil valley. There Mauritanian Berbers founded Tittawan. Phoenician traders used the fine natural harbor, and under Augustus the Romans colonized it as Tamuda. Thirteen centuries later, Muslim Berbers of the Marinid sultanate rebuilt it as Tétouan, then dispatched armies to subdue Ceuta, and galleys to harass the Spanish. Bad move: the Castilians razed the casbah in 1399, and the Portuguese raided it in 1436 for good measure. In 1492 the Granada War and greater *Reconquista* wound to its close, and the Nasrid dynasty—the last Arab power on the Iberian peninsula—was driven from Andalusia. Ferdinand II and Isabella I moved their royal court to Alhambra. The remaining Moors were tamed as *mudéjar*, and would soon be expelled as *moriscos*. Ali al-Mandri

Alliance Israélite Universelle: כל ישראל חברים Universal Israelite Alliance

Bismarcksche Reichsverfassung: Bismarck Constitution **Tittawan:** ⵜⴰⵟⴰⵎⴰⵏⵜ Tettawan

mudéjar: Muslims remaining in Iberia following the *Reconquista*

moriscos: Forced converts suspected of crypto-Islam

of Piñar saw which way the winds were blowing, and sailed south across the Mediterranean to refortify Tétouan pursuant to reclaiming Moorish Spain.

Andalusian Moors would never again control Granada, but their corsairs plied the Middle Sea anew. Captured Christians were held in the fetid tunnel complexes called *mazmorras*. Miguel De Cervantes, himself for seventy-two months a prisoner in Algiers, refers in *El juez de los divorcios* to “captivity in Tétouan’s caves,” and Chapter XLII of *Don Quixote* reminisces of “the deepest mazmorras of Barbary.” Growing weary of this, the Spanish once again sacked Tétouan, this time destroying its harbor.

Jews established communities in Hispania soon after the fall of the Second Temple in the first century. For over a millennium of Arab rule they lived as *dhimmīs*, paying *jizya*, the Muslim tax for tolerance of “people of the covenant.” The Spanish Empire became less attractive for its Jews with the investment of *Tribunal del Santo Oficio de la Inquisición* in 1478. Upon taking their seats in Alhambra, the Edict of Expulsion was among the Catholic monarchs’ first acts, and Jewish life in Spain became entirely untenable.

These Sephardic Jews dispersed to the Maghreb, and with the advent of *limpieza de sangre* laws even the *conversos* joined the diaspora. There were famines and there were pogroms, and in 1807 the Mellah of Tétouan was temporarily relocated so that Sultan Slimane might build a mosque where it had stood. Still the Sephardim developed successful communities through Morocco, and participated in the Makhzen elite. 1859’s Hispano-Moroccan War saw Spain’s General Zabala subject the Tétouan mellah to bombardment, and Riffian tribesmen finish the task of destruction. The Jewish press in Europe published appeals for a “Morocco Relief Fund”; rebuilding was brisk. In 1862, the AIU established its first school there under Rabbi Isaac Ben Walid. That same portentous year Prussia’s King Wilhelm I, acting from the Carlylean play-book, appointed the Junker Otto von Bismarck as *Ministerpräsident*. Bismarck would soon repay the favor by proclaiming Wilhelm the first *Deutscher Kaiser*.

Denmark’s most adept defenders a decade earlier had been Britain and Russia. The Crimean War had already weakened Russia when in 1863 partitioned Poland’s *Komitet Centralny Narodowy* together with Lithuanian *szlachta* launched the January Uprising. Alexander II warned the Poles to “forget any dreams,” Prussia opened her railways to the Tsar’s forces, and within the year even Rochebrune’s *Żuawi śmierci* had been marched off to Siberia as *sybiracy*, or more often slain. Russia was in no mood to begrudge friendly Prussia her meal of the northern duchies. In July 1863 Palmerston stood before Parliament and promised to defend Danish territorial integrity, but the British economy

El juez de los divorcios: *The Divorce Judge* (1615)

dhimmīs: ذمّي “People of the Covenant” (Jews and Christians under Muslim rule)

jizya: جِزْيَة Taxes paid by *dhimmīs* in place of Muslim alms

Tribunal...Inquisición: Tribunal of the Holy Office of the Inquisition

Sepharad: סִפְרָד an uncertain destination in Obadiah 1:20, now Spain

limpieza de sangre: blood purity *Deutscher Kaiser*: German Emperor

Komitet Centralny Narodowy: Central National Committee

szlachta: Polish and Lithuanian nobles

Żuawi śmierci: Zouaves of Death

sybiracy: Pre-GULAG forced Siberian labor

struggled meanwhile due to the Cotton Famine caused by the American Civil War; the armies of Victoria, soon to be named Empress of India, garrisoned the Raj half a world away following 1857's Sepoy Mutiny.

Thus began Bismarck's years of blood and iron. In January 1864 he demanded King Christian IX rescind the November Constitution. Forces of the Prussian and Austrian Empires rode north on the first of February; the prostrated Danes ceded Schleswig, Holstein, and Saxe-Lauenburg six months later. Prussia turned upon her *Öster* ally within two years, soundly defeating them at Königgrätz, and the Hohenzollerns had finally eclipsed the Habsburgs. Austria, roughly expelled from the German Confederation, shackled up with Hungary. Their 1914 declaration of war on Serbia triggered the guns of August, the Great War's long grave already dug, and the dissolution of the Austro-Hungarian Empire—but that's another story, one better told by Barbara and Winston and ten thousand others. Finally, Napoleon III (goaded by Empress Eugénie, foreign minister Agénor de Gramont, prime minister Émile Ollivier, and Bismarck's Ems Dispatch) declared war on Prussia in 1869 with no allies, no offensive plan, no system of conscription, and centralized railroads.

For a year Leopold Katz had spoken to the AIU without commitment. With Freida in Königsberg he watched the artillery and troops rolling west, and their talks turned more ardent. The established Sephardic enclaves of Morocco held definite appeal; the Mediterranean climate, it was hoped, would help hold off Freida's recurring consumption.

Bazaine's *Armée du Rhin* was savaged early. From its ashes rose briefly the *Armée de Châlons* to meet the Prussians at Sedan. Fighting began the first of September. The next day, Napoleon III surrendered himself and 104 kiloflowers of French youth to be paraded outside besieged Metz. That same day, Katz accepted the AIU's offer. It was good that he did: the telegraph lines of Paris were cut on the 27th, and the AIU's confirmation postcard left the capital via balloon mail. The remaining forces under Bazaine surrendered Metz the next month.

Roosevelt: Is this fellow Jewish?

Foster: I don't believe so. Many of the names we think of as Jewish are just German. He certainly doesn't practice.

Roosevelt: I was the first President to have a Jew in my Cabinet. Oscar Straus. Also from Georgia! Do you think he might be related to this Katz?

Foster: Unlikely. The names are spelled and pronounced differently.

They rode west to the French border on a *Schnellzug*. Infantry that had crossed that same border only months ago were already returning the other direction, drunk, riotous, filling every station through which they passed. On occasional flatcars sat sullen French prisoners, mostly unhurt and in seemingly good health. The majority had already wintered in Prussia. It seemed to Freida that they could easily escape, though the military police with their Dreyse rifles

Öster: Eastern (usually Austria, though see e.g. World War II's *Ostfront*)

Armée du Rhin: Army of the Rhine

Armée de Châlons: Army of Châlons

Schnellzug: express train

would surely endeavor to stop it. Still, were a company to break all at once, it was unlikely that more than a handful of men could be brought down.

They switched in Strasbourg to what months ago had been French rail, waved through by listless *citoyennes* under the watch of cheerful Prussians. It was all very orderly for a country under unexpected occupation. They arrived in *Gare d'Austerlitz* March 3, where the streets outside were being symbolically scrubbed following a Prussian march through the capital. Food remained scarce. The air was thickly gravid with revolution. They remained two uncomfortable days, receiving many hard looks from the Parisians. Within weeks, the family Katz was in Morocco, and the Commune was in control of Paris.

Leopold taught mathematics at the Tétouan school as he had promised, but yearned for the culture and sophistication of Königsberg. After two years, they said their goodbyes and moved two hundred kilometers south into the historic Mellah of Fez, within sight of the forbidding *Bab Semmarine*. There they were loved by their neighbors, and when Dreyfus spent his time on Devil's Island they were happy to have left Europe. Two daughters were born within twenty months, and in 1875 also a son, the aforementioned Moses Elias Katz. All three children proved clever and forthright, and they were happy.

Leopold and Freida were content to grow old in Fez, where the Jewish community went all the way back to Idris I, first Emir and fifth generation to Muhammad *alayhi as-salām*. Eager Moses dreamed of larger things than the dwindling Jewish sector of the African Athens and the nominal economy afforded it by their true French masters. When a wretched *shiksa* showed up at their hearth with a shameful, swollen belly, she was sufficient motivation to join a cousin in America. For three weeks they sailed west across the Atlantic in the *SS Antonio Lopez* out of Spain: Moses, Ghislaine, and little Roy Simon, only six months old when in 1901 they embarked for Ellis Island and New York. He seemed marked even by that time by a trifling and wayward nature.

Roy was drafted into Pershing's Expeditionary Forces and fought not without distinction in the Argonne. It seemed that service in France had done some good for the boy: the grammar and spelling and outlook of his letters home improved, and he wrote of becoming a dentist. Alas, Spanish flu struck while he awaited transport from the Bordeaux embarkation zone known as the Mill. For seventeen days he hallucinated and sweat in a dank château pressed into service as an Army hospital. On the second day he began to seize. Doctors noted active encephalopathy; Reye's syndrome was ruled out only by his age. Swelling persisted almost forty-eight hours. Brain damage was feared. Indeed, had Roy's skull been cracked open, a pathologist would have found hyperaemic meninges, a pulpy and oedematous cerebrum, and reddish discoloration of the brainstem, along with diffuse haemorrhagic lesions—he was one of many victims of *encephalitis lethargica* in combination with that year's fierce A/H1N1. Roy was never quite the same after that; he didn't mail another letter until

Gare d'Austerlitz: one of Paris's train stations

Bab Semmarine: باب السمارين "Gate of the Farriers" southern gate of Fes el-Jdid

alayhi as-salām: صَلَّى اللَّهُ عَلَيْهِ وَآلِهِ وَسَلَّمَ peace be upon him

shiksa: Gentile woman (often derogatory)

he'd already set up station as an attendant at the Perkins Bath House on the boardwalk of Jacksonville. No further missives were forthcoming, and he never installed a telephone.

Roy remarked to seekers of his wisdom that the Jacksonville beaches were "awash with gash"; between his New York accent and general lack of spoken clarity since Bordeaux it almost rhymed. He was generous and free with his seed. Late in 1930, after Smoot-Hawley had begun to take its toll but before the bad bank runs started, he was presented with a son and a paternity suit. The boy's head seemed smaller than a healthy brain might warrant, his eyes still more so. He spoke very little, ducking his head under his arm when Roy looked at him. The upper lip, thin as a papercut, might have confirmed to a more perceptive potential papa the sad evidence of fetal alcohol syndrome, and indeed his mother had trouble standing or even staying awake. When in January 1931 she died of typhus, Roy took in an apathetic child unpropitiously christened Gabriel Furbish Bellows, endeavoring to make of him some approximation to a man. The first thing was to rename the boy. Roy thought of two other nonpracticing Jews with whom he'd fought. Thus the unfortunate Elijah Dorfzaun Katz.

Elijah was only seventeen by the time the next draft ended, narrowly avoiding World War II. He moved in with (but did not yet marry) Mildred Joy Bickers, a vivacious native of the central peninsula. She consumed in long pulls PBR without discernible limit, and while doing yardwork wore her rampant abundance of black hair up in curlers. Hearing on the radio about the Polish camps, he decided that giving up the Jewish faith and community was well and good, but it was probably best to shuck the naming, too. When their first child came, he told Mildred, "Let's name him Julius, like Caesar."

"I love it! I luv youuuuuuu! What about Cassius Julius?"

"What the hell's a Cassius?"

"He killed Julius Caesar. So he'll have the strength of both Caesar and the man who killed Caesar."

"No one killed Julius Caesar, dummy. He fell off his horse."

"Simple son of a bitch, Brutus and Cassius killed him in the Senate."

"The Senate! Why would an emperor be in the Senate?"

They fought and fucked and Cassius Julius Katz carried the day. Paternal Jewish heritage was never mentioned to Cassius. The few times he inquired as to their ethnicity, Elijah claimed to be Italian.

Roosevelt: How did you identify the material in Savannah? I thought it impossible to detect that kind of thing. Are there leaks in his organization?

Foster: Any number of ways. CIA has people in Kazakhstan with ears to the ground and dollars in pockets. Sailors weren't delighted to be used as mules in this kind of operation. NSA is up to their asses in Astana—they've got video of the diversion so good you can see the outlines of cocks.

Roosevelt: Uncircumcised, no doubt! Heathens.

Foster: Burroughs described Arab cocks as "wide and wedge-shaped."

Roosevelt: Reading *Naked Lunch*, I thought it a sad thing that I could go on a hundred safaris without the chance to bring down a man-sized centipede.

Elijah, Mildred, and CJ Katz left Jacksonville for Atlanta's northern exurb Canton in 1952, CJ two years old then, too young for memories. When he asked his parents later why they left Florida, he received uncertain answers and conspiratorial looks. Piecing together fragments and lapses over the years, he concluded that Mildred, passed out in the crumbling lanai opening onto their swampfront, reclined, sleeping with her Winchester 94 clutched loosely across her chest (a habit retained all her days), woke to movement among the fetterbush and honey locust. Announcing, "Step on my land, and I'll put one between your goddamned eyes," she leaped up, raised the .30-30 to her face, and went to half-cock. From the arrowwood shrubs burst an alligator absolutely tearassing it, a big fucker, seven feet at least, probably eight. Behind it emerged a specimen of genuine Floridian trashperson: denim overalls frayed to exhaustion, Confederate stars and bars sewn into his hat, shoeless, waving a machete, hooting delirious hog calls. Mildred, uninterested in whys and wherefores or what had been done to whom by who, drunk and sleepy and unhappy in the 36 °C steambath of fall in Duval County, dropped a double tap into the man's ten ring. She couldn't very well have a gator fucking with her gardenias and tomatoes, so three went into it as well. As the smoke drifted up and away, Elijah shambled out with a loud, clueless clatter, and she instructed her useless man to fling that piece of shit somewhere back in the swamp, somewhere deep. No *not* the gator are you out of your goddamn mind? She went inside to fetch her prized Silver Stag, a gift from her sister: there were a good thirty-five pounds of fresh meat in her backyard. Maybe more.

In Canton Elijah started up a business removing and disposing of dead animals. Callers sometimes complained of live ones, so he moved to serve that market also. "It's a series of yes or no questions," he told CJ on a job: "Is it alive? If yes, kill it. Is the carcass on private property? If yes, remove it and bill the owner. If no, remove it and bill the county." Many years later, CJ would collect this logic in an actual flowchart.

Their gloves were thick and went up to the elbow. They wore no facemasks. Elijah flung the gray bag and its two shelled armadillos, lethally toxified with phosphine gas, up into the truck's bed. "Having collected it in at least two Hefty Steel Sak reinforced bags—these sons of bitches might be dead, but their claws will come through a single bag and rip your ass up, CJ—you burn it." He dropped to a whisper. "Send it back to God." His breath was sour.

The incinerator sat in their backyard, effectively driving away neighbors despite a stake of six acres. Elijah put together the initial coal-fired installation. Mildred insisted that diesel would be more efficient, but Elijah pointed out that the Auschwitz crematoria had run off coke and that was good enough for him. It was a shambolic thing, quickly blackened and rusted, and the dark smokes of a burn were suffocating, mephitic, still barely tolerable at half a kilometer. The miasma got into your clothes and even your skin, and you never grew accustomed to it. CJ had few friends.

Cassius never returned following tenth grade's winter break, and had no

intention of acquiring a GED. He was nonetheless quick, with an uncanny knack for machines and hands-on, practical engineering. He proposed to Elijah improvements on what was by now a truly appalling and macabre furnace. When Elijah from laziness more than anything objected, he bought his own acres—these in Pickens County to the north, sparse and olfactorily remote—and with only a few simple calculations and furrowed brows and a borrowed arc welder constructed a marvel of a puppy smelter. Should Vulcan himself need reduce an unbutchered cow to ashes and atmosphere, he might in a pinch seek out Cassius's Carcasses LLC. It consumed natural gas, supported temperatures up to a kilodegree Celsius, could vaporize anything short of a moose, and when Cassius dared one blustery day to winch in a whole trio of shaggy black bear cubs, it handled that onerous load. He clapped his hands. "Eat shit, bears!"

Soon he had the contracts of five counties, and Elijah's sputtering abomination had been ordered destroyed by the City of Canton. Elijah feuded and appealed and victorious Cassius bought a lovely starter home in a Woodstock subdivision. He provided the angel capital with which Elijah opened on Highway 92 what would become a thriving video rental concern. He successfully courted the boisterous Eveline Ringel, marrying her and bringing into the world the first Katz in three generations not born a bastard. He reluctantly took on his younger brother and his younger sisters' corn pone husbands, until the former set himself on fire, and the arrant in-laws, normally torpid beyond belief, were observed trading blows over a third woman, wife to neither, having tall hair and dubious honor. Cassius thought *Spartacus* a bitchin' film, inspirational really, and loathed those cracker-ass neighbors that clung to third- and fourth-hand memories of the failed Southern rebellion.

Sherman Spartacus Katz was in 1980 given a name with panache.

Foster: We're still arguing about how to go in if we find him. We don't think he's violent, but who knows? We want his computer badly, but a source says he's gone to great lengths to obstruct that possibility. I doubt we find significant incriminating material at his house.

Roosevelt: All that crab, though. A shocking amount of crab.

Foster: That's correct. A check on his cards revealed a charge, \$300 plus taxes, for fifty tins of clearance crab claw meat, a pound each. I asked our close source, and she said he's eaten nothing but crab meat all month.

Roosevelt: The Marino woman? How would she know?

Foster: She blew him and he tasted like Diet Mountain Dew and tide pool.

Roosevelt: Delicious, but hardly admissible testimony!

The boy evidenced early a mind of rare puissance, skipping the second grade entirely. By eight he was reading longer novels than Cassius had ever looked into, and asking questions neither parent was in a position to answer. Innocently he one morning queried his father as to the meaning behind $E = mc^2$; it led to a miserable evening that saw CJ struggle through the library's *Encyclopedia Britannica* entry for SPECIAL RELATIVITY, and a tortured explanation (involving rather more railroads than expected) that satisfied no one. He won his elementary school's Spelling Bee and Geography Bee without serious competition, and if they'd had any other Bees he'd have won those, too. He was a

force of nature at the state academic bowl tournament: there was never doubt as to who carried Georgia's 1991 Elementary School champions.

By 1991, even as she directed Sherman to apply to parochial middle schools, Eveline (unquestioned spiritual leader of the house Katz, Ephesians 5:22 be damned) was drifting away from the Catholic doctrine she'd learned as a girl. Her social group had become one of Protestants, many of them evangelical, and engaging with them in daily Bible study she found no Scriptural evidence for fish on Fridays, nor *limbus patrum*, nor the exclusive authority of Douay-Rheims and its dubious apocrypha (resistance stirred within Sherman as well, for different reasons). American Catholic progeny might no longer spend much time at the CYO (to the chagrin of Frank Zappa), but they gather on Wednesdays for CCD, "Confraternity of Christian Doctrine," an hour-long class on the catechism. It was taught by volunteers, and Eveline stepped up that year as tribute. Much to Sherman's dismay, she took the sixth grade class into which he was slotted. Arriving home from training, she leafed through the assigned curriculum, frowning, and declaimed "This is crap. I'll just teach what me and the girls are doing in Bible Study that week."

"I don't know, mom, it seems dicey to volunteer to teach a class and then take it in your own direction."

"It's all the Bible, Sherman."

"Well sure but isn't the whole fragmentation of Christianity due to differing interpretations of the Bible?"

"Catholic means 'universal,' Sherman. So Catholicism includes all those interpretations."

"How can a system contain contradictory statements? You can then derive anything you want." He didn't yet know $\neg(p \wedge \neg p)$ as Aristotle's law of noncontradiction—*Metaphysics* was two years away, Gödel four—but he could smell a rat. "And I don't think you can say that just because it means 'universal' it actually is? And wouldn't it then contain, like, Satanism?"

Annoyed: "Don't say Satanism is contained in Catholicism or I'll slap your face. That's blasphemous, Sherman. You're stupid. God contains many contradictions. Jesus and God are distinct, yet they are the same coequal, coeternal, consubstantial hypostases, one Holy Trinity. This is Christianity 101. And, 'universal' means 'universal for Christians,' not 'whatever damn thing you want to believe in.' Give me a break."

"So not really universal, then. In fact restricted."

She was now grievously vexed. "Only if you're a dumbass. No one else is asking the Catholics, 'hey you're universal, can I sacrifice something nasty in here to Michael Dukakis?' because that's a stupid thing to ask."

"Are Mormons then under this umbrella?"

"Mormons aren't Christian!"

"What are they then?"

"I don't know! They live in Utah!"

Further questions would get him nowhere. So for several Wednesdays Eve-line taught her renegade class in the evening with Protestant *samizdat*, and Sherman was torn between appreciation of her freethinking and worry that she'd say something startlingly stupid. It happened three weeks in: she began with a Psalm, then spooled out a freestyle regarding David. She spoke of treacherous Absalom, sister Tamar, and half-brother Amnon, David's firstborn. Amnon looked upon Tamar with lust, a grave *chillul hashem*, and raped her, and Absalom engineered his murder in retaliation. She paused, and looking salaciously out over the class, said with triumph, "See? You don't need *Married...with Children* or Cheryl Tiegs splaying herself all over the cover of *Sports Illustrated*. The Bible's got plenty of sexy stuff in it." She gave them a moment to exchange high-fives or perhaps raise her a cheer, and seemed disappointed that they did not. Sherman buried his head. They rode home silently. The call requesting that she not return the next week, or ever, came that night.

Nonetheless, Sherman applied for and was awarded a full scholarship to St. Anthony's in Dunwoody, and his parents' hearts burst with pride. In 1992 Sherman Spartacus and three younger siblings were packed into a Dodge Caravan, and they moved on up to comparatively tony Marietta. For two years, Sherman covered himself and his family with glory. He won another Geography Bee, and this time went to Nationals. He found a true delight in Latin: all his life he would call upon the Virgil, Catullus, Horace, and Ovid learned that year by heart. He mastered the language in three quarters, swallowing it up, and successfully petitioned to study Greek in the eighth grade. That same year he achieved a score on the AHSME sufficient to qualify for the American Invitational Math Exam, the first eighth grader to do so at St. Anthony's in four years, *vox clamantis in deserto*. He wrote two plays (both readable enough), short stories of varying quality, and belted out a fine first tenor. His play on the defensive line was by no means inspired, but solid; he was likely to go first-team varsity by tenth grade at the latest. He could name the most forks at cotillion. Then he got a modem, and a new world.

* * * * *

The Naugle panel of 1982 recommended that the Shuttle carry civilians in the hope of "adding to the public's understanding of space flight." Thus was born NASA's Space Flight Participation Program; two years later, the President announced the ill-fated Teacher in Space Project. The TISP placed "payload specialist" McAuliffe aboard STS-51-L, the tenth mission of OV-099 *Challenger*. As detailed in the Rogers Report (and illustrated on national television by Richard Feynman), the elastomeric O-rings of Thiokol's solid rocket boosters stiffened in the freezing temperatures of Kennedy Launch Complex 39B. Ammonium perchlorate composite propellant combusts in its chamber at a pressure of

samizdat: самиздат grassroots dissemination of prohibited literature

chillul hashem: חילול השם a desecration of God's name. Leviticus 22:32

AHSME: American High School Mathematics Exam

vox clamantis in deserto: the voice of one crying in the wilderness. Isaiah 40:3 as quoted in Matthew 3:3, Mark 1:3, Luke 3:4, John 1:23 (KJV)

STS: Space Transport System **OV:** Orbiter vehicle

over six megapascals; the resulting gases exceed 3300 °C. Sixty seconds after launch, the O-ring joint failed, and flame arced away toward the LH₂ segment of the central, structural External Tank. The Orbiter's fate was sealed. Liquid hydrogen began leaking four seconds later, and what had been flickering, lambent plumes came together in a bright orange ball. At T+73, Pilot Smith was recorded muttering "uh-oh," and within a second *Challenger* was engulfed in a mass of flame. At twice the speed of sound and fourteen kilometers above sea level, aerodynamic loads well beyond design parameters broke the Shuttle into several large pieces.

Among these discrete elements was the pressurized crew cabin, shorn from the payload bay, trailing umbilicals and fluttering electrical cables. Impelled by inertia, it tore through the thin troposphere in a great ballistic arc, a confused meteor reaching apogee twenty kilometers up. Buckling of the mid-deck floor that would have accompanied uncontrolled decompression was absent from the wreckage; there exists convincing evidence that the reinforced aluminum compartment's crew remained conscious across two and a half minutes of unpowered flight. Through the triple-paned fused silica forward windshield they beheld momentarily a hot iridescence, replaced quickly by blue sky. Had things gone as planned, this would have darkened into the blackness of the void once the Orbiter crested the Rayleigh-scattering mesosphere. Instead, they rotated forward, pitching down towards the brown waters of the Atlantic. This profluent trajectory abruptly terminated with a 200g impact quite incompatible with existence.

Before McAuliffe's selection, overtures had been made to the Children's Television Workshop that puppeteer Carroll Spinney's Big Bird (plus teddy bear Radar, a gift from Mr. Hooper) might fly aboard *Challenger*. The idea was never approved: the Muppet's two-meter-plus stature and loosely bonded plumage probably doomed the prospect from the outset. NASA didn't confirm these talks until 2015, but rumors had circled long before that. A wide-eyed Katz of fourteen years read them on FidoNet in 1994, and was deeply moved. The next day, he submitted to St. Anthony's literary magazine *The Disputant* "Big Bird Contemplates Terminal Velocity from *Challenger*":

Ostrich, emu, proud penguin black and white
gaze skyward and wonder what could have been.
Failed birds afforded feathers but not flight
might seek it in rockets Promethean.
It seemed unfair that I'd be earthly bound—
hale wings flapped, yet never left the Street.
But looking back, at least that asphalt ground
never betrayed these three-toed orange feet.
Fell capsule in which all my dreams were placed
falls homeward with obscene velocity.
Life emerged from the oceans by God's grace;
I return to the oceans at Mach 3.
Though not all birds are built to fly,
Birds Big and small must one day die.

It was uncommon for *The Disputant's* staff to provide reasons for a rejection, or indeed to indicate any verdict prior to publication. In this case, however, Katz was called to the faculty advisor's classroom, where he was informed that his sonnet was "demented, perverse, absolutely unhinged," and that he ought in the future take such efforts directly to the counseling office.

* * * * *

With fervor he had begun to program. Too many nights to count he dreamed that he and those he met were C++ code. Function invocation and call-by-value reduction strategy replaced communication verbal or otherwise. There was no loss of flexibility or expression. No one called attention to this extraordinary state of affairs. On the phone a few years later, a prospective date indignantly asserted nonexistence of her person's potential digital incarnations: "they couldn't feel the sensation of tasting an orange!" From dreamed experience Katz knew her to be wrong; from waking life he understood it neither time nor place to press the issue. But he asked, without obvious contempt, "is the dream of a sensation a real sensation?"

Lacking any kind of instruction or textbooks, Katz's knowledge of computer science was all over the map. Much of his university experience was learning the proper names for techniques and results he'd derived in high school, and enjoying a much more complete and refined presentation. He wrote his first program on an ATARI 400 in 1986. He had regular access to nothing else until 1992. He would greedily commandeer any Apple IIGS or IBM XT or even Commodore 64 he saw, but for six years it was just him and the ATARI's sixteen kilobytes and MOS 6502B. His only data structure was the array. With the endless time of children he spent hundreds of hours writing to various addresses and watching for results, to which he paid close attention.

By the time he got an 8086, he'd worked out a sizable chunk of the ATARI's hardware interface and instruction set. He didn't know addresses 0 to 255 were "page zero," but he knew they supported faster access than any other memory. He didn't know the term "register," but he knew five values were tracked and updated very quickly. He called them "clocks," thinking of them as the red numbers on the faces of ubiquitous digital timepieces.

He didn't know what "assembly language" was, but he knew that the same "clock" that tracked where you were in the program could be used to read the running program, which was a large array in memory. You could write to that array and change the running program. The program's behavior changed in a way correlated with the changes you made to that memory. In a few months he caught on to jumps. With that insight, the rest unrolled pretty easily.

Then he realized you could just write your program with these numbers directly rather than using BASIC, and with triumphant enthusiasm began to do so. He didn't know what "machine language" was, either. They were just "program numbers." Base ten numbers, at that—he was unaware of hexadecimal. A decade later, telling the story, someone asked if he'd made the change

ATARI: 当たり lit. "to hit the target"

BASIC: Beginners' All-purpose Symbolic Instruction Code

for performance. “No,” he responded, “but I didn’t have a reference for either the instruction set or BASIC, just a few magazines I’d found at the library with example code. I was building out my own references for both. With machine code, I could be sure I’d explored the entire capability space, due to the finite encoding of instructions. It was about completeness.”

Foster: The more we dig, the more we turn up on these two, Katz and one Michael Luis Bolaño. They’re into all kinds of dirt. It’s likely that they made most of the LSD in this country for the past few years. Two boyfriends of Bolaño have gone missing. Likewise another name that links up, one Greg Moyer. Besides the LSD, they appear to have trafficked various controlled substances basically all their adult lives.

Roosevelt: Mossad thinks Katz changed his grades in high school. To strike at the official record is to strike at the very foundation of democracy, and at truth itself. Unwelcome news. Most unwelcome.

While still working in BASIC, he needed the ability to quickly add elements anywhere in an array. If you already had five elements at positions 0 through 4, and needed to insert at position 1, you had to copy four elements a position forward each. That took time—possibly a lot of time if it was a big array. You had to start from 4: if you started by copying 0 to 1, you wiped out the item at 1, and your whole array ended up with copies of that first value. If each element contained the index of its subsequent element, though, you didn’t need to touch any other positions. It just cost a little memory, and you had to remember to walk the array using those indices rather than monotonically increasing constant ones. This was a useful trick, one he used often, calling it “telephones”; those taught it knew it as a linked list.

Roosevelt: Does Mossad just watch all Jews worldwide, you think?

Foster: Mossad watches everyone, but, again, probably not Jewish.

Roosevelt: They wouldn’t know that.

Foster: Until they started watching him.

Working in machine language by now, he was searching for items repeatedly in a sorted array. He’d start from position 0, check to see if the item there was what he was looking for, and if so, great. If not, if the value is greater than what you’re looking for, it’s not in the array, and you can fail early. But otherwise, you had to go to the next position and check. If you were searching for the last item in a big array, this took a long time. It was annoying, because if you’re trying to, say, go to the last page of a book, you can do that very quickly. He thought: how do you go to a particular page in a book? You don’t start from the beginning and go page by page; you open the book to the right general area. So if you have, say, 100 elements, start at 50. If the value there is greater than what you’re looking for, go to 25. If it’s less, go to 75. If it matches, great. He called it “lightning find”; those taught it knew it as binary search.

* * * * *

LSD: lysergic acid diethylamide, $C_{20}H_{25}N_3O$, of which much more later

In the brutally hot Georgia summer he one afternoon hit tennis balls against the side of their first house. That part of the plot was a hill of red sticky earth, rich with divots and bare rocks and narrow gullies. It was a game of chaotic bounces and no lack of assbusting. Planting himself again into the mud, he watched the Penn 3 roll away, and mused that you never fall in the tennis video games. He pondered how this mechanic could be added, and inferred that what you really wanted were the full physics; the game ought simulate your virtual feet dashing across its Centre Court. Why didn't all games work that way? Was it impossible to build in chemical knowledge, so mixing virtual ammonia and bleach would gas into virtual chloramine? Could you construct some universal engine that was fed a molecular description plus higher-level holistics and gave you a truly realistic game? It would require a great deal more computational power than was available from his ATARI, sure. How big of a world could you run on one of those Cray X-MPs? What if you wanted your game to take place over the entire known universe? Was it possible to make a machine that could simulate all the universe's atoms? Even if you could compute the time evolution of one atom with less than one atom, wouldn't it need to simulate itself? And what if, in a game built on this engine, you built your own computer and attempted to simulate all the game universe's atoms, so there wasn't a true physical constraint? Was it possible? Could you solve the recurrence? You could call the game *Life*. Would it be worth playing?

A few weeks later, CJ asked Sherman if he was interested in learning how to join wood. The boy perplexed and amazed him, and yes frightened him a little, too; CJ and Evy worried that one day they'd all be electrocuted. It would be good to get him out of the house and teach him some workaday skills.

Sherman responded languorously, "I intend to build more elegantly. My media will be the photon, the atom. Deoxyribonucleic acid perhaps."

Cassius evaluated the boy. "Yeah, you sound like you're taking acid."

"Deoxyribonucleic acid is DNA." Sherman rolled his eyes.

Cassius wondered what the hell it meant to build with DNA. For that matter, what's a photon? Was it like a proton? He made a note to watch more *Star Trek*. It was mortifying to be outworded by this strange son. "I built your ass with DNA. If you don't want to learn joining, take it outside and mow the lawn. You're not staying inside with books all day today."

"Are we so vain?" Katz scrambled to his feet in a show of defiance. "Must we strive against nature's order? We meaning myself, of course, as no other members of our hexad Katz are directed to manhandle that thrice-damned mower around our hilly acre. Only I must pony up this weekly tribute to Sisyphus. *Multi autem sunt vocati pauci vero electi*. Why roll out to the Caravan each Sabbath to praise the Lord if, presented with God's good verdant bounty, we cry 'Hold! Too much!'" He spoke with fire now, like a preacher of the Great Revival. Cassius watched, chewing thoughtfully his Lebanon bologna and cheddar on white bread, slow as a ruminant.

"Less than two months ago I was drafted—I dare say impressed—into uncompensated laying of sod. More grass? Less grass? What is it to be? We read

Multi...electi: Many are called, but few are chosen. Matthew 22:14 (KJV)

Proverbs; can we not pick our proverbial lane?” He grew louder and more confident as he built towards magnificent peroration. “To what knuckle-dragging mongoloids of the heartland utopia do we hope to prove ourselves through this weekly ordeal?” Returning to normal volume, he looked Cassius in the eyes. “And what is it, Old Father, Old Artificer, that we prove?” He fell to his knees, lifting his hands in supplication, taking his words from Josiah Wedgwood. “Am I not a man and a brother?”

“Nope, you’re thirteen years old, and you’re gonna mow the lawn.” Cassius wondered, not for the first time, how this bizarre and impractical child had fallen out of his wife. Swallowing the last of his sandwich, he observed “it’s just getting hotter out there while you bitch.” He kept his tone even and sagacious.

Sherman trudged towards the garage, unhappy. “Is this the weekend our hero succumbs to heat stroke? What Valkyries will spirit away his body, shriveled and dark like a clay California Raisin among the red clays of Georgia? Ah, Bartleby! Ah, humanity! Six score years ago, Sherman burned Atlanta. Today, Atlanta burns Sherman. Every time I inhale the uncombusted hydrocarbons and volatile compounds of that machine’s exhaust, I lose IQ points.”

“Didn’t you just say you wanted to build with atoms? Hydrocarbons are atoms, aren’t they? Go get some practice.”

This offense was too much. Sherman shrieked, “They’re molecules! The combination of ‘hydro’ meaning hydrogen and ‘carbon’ meaning carbon precludes the possibility—” but his father had already left.

Thoughts of rigorous definitions led to musing upon numbers. What was “one” in its Platonic Form? The dictionary said “a single thing,” but wasn’t “single” just a synonym of “one”? You couldn’t say “that which when added to itself is two,” because then you’d need define “two,” and how do you do that without “one”? Zero seemed easy enough: an absence. The empty set. Nothingness, a single representation general across all countable things.

If you have zero, you could define one as “those collections from which removing any element leaves zero,” but isn’t “any” just another way of saying “one”? No improvement there, but if you said “those collections from which removing any non-trivial subset leaves zero,” that seemed to work: there was no need to artificially limit the difference; the definition itself provided the necessary restriction. “Two” follows: those collections from which removing any subset of size one left behind a collection of size one. Satisfying. In eighth grade he read *ho gar arithmos estin ek tou henos kai tes dyados tes aoristou* and smiled in agreement. Years hence he’d learn equivalence classes, and the standard constructions within Zermelo–Fraenkel set theory of von Neumann ordinals using successors and bijections, and integers \mathbb{Z} using the Cartesian product of these ordinals, and so on through the rationals \mathbb{Q} and reals \mathbb{R} , then \mathbb{C} and \mathbb{H} and finally the quirky \mathbb{O} in all their eight-dimensional, noncommutative, nonassociative glory, but look back warmly on this early insight.

ho...aoristou: ὁ γὰρ ἀριθμὸς ἐστὶν ἐκ τοῦ ἐνὸς καὶ τῆς δυάδος τῆς ἀορίστου Number emerges from monadic one and the unbounded duality. Aristotle, τὰ μετὰ τὰ φυσικά (*Metaphysics* c. 350 BC)

\mathbb{C} : the complex numbers \mathbb{H} : the quaternions \mathbb{O} : the octonions

The integers grow ever more positive and negative without bound. Yet between every two integers spans another infinite set, dividing that gap more and more finely. The infinity of \mathbb{Z} grows only out; the infinity of \mathbb{R} grows inwards as well. We can count to no largest integer, but we count to n , and say with earned confidence, “I name it n , and $n - 1$ positive numbers are smaller.” Consider the set \mathbb{N} of all positive numbers, and its proper subset of all even positive numbers. Every element $\{1, 2, 3, \dots\}$ can be mapped to $\{2, 4, 6, \dots\}$: just multiply by two. The second set can be mapped to the first by dividing each element by two. Thus there exists a bijection, and the two sets possess the same cardinality. Despite one containing the other and more, they are the same countable size. Hence the meaninglessness of schoolyard taunts of “infinity plus one.” Don’t let your guard down, though: this does not mean all infinite sets have the same size. What does it mean to count to 1.0? Infinitely many positive reals are smaller, and between each explodes another infinity. There is no means by which \mathbb{R} can be mapped to $\{1, 2, 3, \dots\}$. There’s no way by which you can enumerate even those reals less than 1.0. Two infinities—“countable” and “uncountable”—of provably unequal size.

There emerged in the 1980s a cottage industry of encyclopedias. Along with dignified *Britannica* and the rather less genteel *World Book*, a resurgent effort arose from Funk & Wagnalls (*F&W New Encyclopedia* and, licensed from Peanuts Worldwide, *Charlie Brown’s Cyclopedia*). New competitors innovated and emerged: *Grolier (Encyclopedia Americana)*, *Stuttman (New Illustrated Science and Invention Encyclopedia)*, a *Children’s Britannica*, *Collier’s (another New Encyclopedia)*, *Childcraft (How & Why Encyclopedia)*, *Greystone’s* surprisingly broad *Practical Handyman’s Encyclopedia*, and *Golden Book (Encyclopedia of Natural Science)* are just a sample of shortlived sets striping twenty-plus volumes across A–Z. Displays at grocery stores and suburban malls hawked the first volume for some nominal sum, usually less than a dollar, in the hope that you’d spring for the entire set based off the strength of ABACUS or ANGOLA.

Ma and Pa Katz, thrifty shoppers all their lives, were not about to shell out a grand for reference sets Sherman could just as well read at the library. At the same time, a single volume for pennies was a phenomenal deal they couldn’t pass over in good conscience. So Sherman came to have eight or nine first volumes, and for lack of other material read and reread them. All his life he enjoyed a thorough, detailed knowledge of subjects starting with AARDVARK and ending somewhere around AZERBAIJAN or BAKU, as they stood anyway circa 1988. Thankfully, this included ARITHMETIC and ATOM. Eveline and Cassius were pleased to give their son a solid grounding, at a price that couldn’t be beat. Katz thought Jabez Wilson a whiny ginger bitch.

Well into Catholic school and halfway through Confirmation lessons, scandal erupted in their parish. The choir director, an old friend of Eveline’s, was forced out from her position. A few weeks later the family Katz attended a non-denominational Evangelical assemblage that met for several long hours in a high school gym. Sherman despaired of his new fellow communicants, clearly a step down in class and social standing from the smartly dressed congregants

his mother sometimes now referred to as Papists. Just two months before, his father had completed the protracted and not inexpensive Rite of Catholic Initiation for Adults, walking the catechumenate largely for his wife's peace of mind. Paul in his Epistle to the Galatians enumerated twelve (well, now only nine) Fruits of the Holy Spirit, and let it be said that Cassius Julius Katz embodied each one as he accepted new heresies so freshly forsworn.

Sherman, a committed Christian possessing a strong, full-duplex relationship with God, God's only begotten Son, and (to a lesser degree) the metaphor-cluttering Holy Spirit, observed this turn of events painfully, with growing heaviness of heart. Until now, he'd compartmentalized faith away from reading, from science, from a nagging absence of evidence for anything but a Deist watchmaker God. For the first time he contemplated his own apologia, finding there nothing but glibly absorbed familial tradition. Regarding the *quinque viæ*, *Prima* (Unmoved Mover) and *Secunda* (First Cause) seemed the same thing. *Tertia* (Contingency) and *Quinta* (Teleological) struck him as failed, grasping logic. He looked around at the world and thought *Quarta* (Degree) a bad joke. Quantum fluctuations, slow roll inflation, and acoustic oscillations of baryons were more or less indistinguishable from an illimitable First Mover; tradition had been shown the door for reasons hardly theological. He said a last set of prayers, intoning them for the first sad time without real hope. From well-practiced genuflection he begged the God of his father (just barely) and forefathers (on one side) to lend him strength enough to believe. He stood and for a moment did not feel a fool. Then like the Temple veil his heart ripped from top to bottom: *templi scissum est in duas partes a summo usque deorsum*.

Emo wasn't yet a thing, really, but he got emo as hell. He underlined, as many had before him, whole long sections from the end of *A Portrait of the Artist as a Young Man*. He drank half a glass of Parrot Bay rum and had within an hour puked out his brains. He wept.

He cursed himself, and God, and his loud, apostate mother in all her misinformed Hofferian ultracrepidarianism, and his recreant father's acquiescence and unexamined philosophy and never being there to shut all this bullshit down, and the Pope and all Popes before him and the antipopes too, hoping them as annihilative as the name suggested, and Peter and Jesus Nazarenus, *Rex Blennorum et Buccinum et Stolidorum*; the Holy Ghost he deemed unworthy of his curses but then, thinking better of it, he likewise cursed. He cursed the Cardinals in their College and the archbishops in their archdioceses and the bishops in bishoprics and *Brave New World's* velvety Arch-Community Songster and Aslan and he cursed all the priests he could remember, whom by that time *The Boston Globe* and hungry lawyers were demonstrating to be well beyond conspiracy to hump and indeed probably indictable under RICO as a continuing humping enterprise subject to formidable mandatory minima in addition to

apologia: ἀπολογία lit. "speaking in defense". Acts of the Apostles 26:2

quinque viæ: five ways. Thomas Aquinas, *Summa Theologica* (1485) I q. 1 a. 3

templi...deorsum: At that moment the curtain of the temple was torn in two from top to bottom. Matthew 27:51 (NIV)

Jesus Nazarenus: Jesus of Nazareth

Rex...Stolidorum: King of blockheads and dolts and fools. cf. John 19:3

Papal reassignment and a stern Polish tonguelashing from the *pontifex maximus* in Holy Father John Paul II's sanctified person or even the unthinkable loss of vestments. He cursed their towheaded catamites, collaborators in their own defilement with apparatus of vitiated lavabo and corrupted thurible, conspirators every time they proceeded to the nave's ambo in silent shameful surrender and acquiescence. Let my ballsack descend, oh three-personed cremaster God, so that I might cool it in the cruets of Eucharist wine, for it is Thy blood. Deez are my nuts which I give unto You. In remembrance of me You can suck them both. He enumerated the intersections of his worldline walking history like worn well-fingered beads of a rosary and among them counted liars and cowards and fools and like neutrinos superpositions of the three and counted himself most foolish of all, and his eyes burned with anguish and anger.

He set to erecting new, harder ethics. What Gospels synoptic and Acts Apostolic called metanoia, Crowley in Thelema named Crossing the Abyss, and the Night of Pan. Sherman was sure only that he'd never again accept an unconsidered truth, and that authority conferred no suzerainty over the real.

* * * * *

At fifteen Sherman Katz tried LSD, and just as a 2400 baud modem had opened up *unus mundus*, so did 150 µg seem the key to *anima mundi*. He first ingested dextroamphetamine as a senior, falling immediately into a lifelong love of substituted phenethylamines. Here in an orange pill was 20 mg of friend, of ally, of powerful ward against sleep and slayer of distraction.

He looked ecstatically forward: forward to a life of imagination made reality through manipulation of hardware and bits, forward to a life of reality made imagination through manipulation of neurotransmitters. Between the Idea and the Reality falls the Shadow, but he would spin the two together like waves of **E** and **B** in a long sleepless waking dream of formal systems. Hell, let's throw in the Shadow; do it like an earthquake's two shear polarizations and one longitudinal wave. *Et movebitur terra de loco suo*.

Reading rapturously aloud George Herbert's devotional "The Collar," the Welshman spoke to him from the Baroque, across four centuries, though perhaps not with the sense the metaphysical poet intended:

*But as I rav'd and grevv more fierce and wilde
At every word,
Me thoughts I heard one calling, Childe:
And I reply'd, My Lord.*

Sherman Spartacus Katz grokked his purpose, his *raison d'être*, his *métier* and justification. With confidence he started down the path ordained.

pontifex maximus: "supreme pontiff" the Pope

unus mundus: one world. Carl Jung, *Mysterium Coniunctionis* (Mystery of the Conjunction: An Inquiry into the Separation and Synthesis of Psychic Opposites in Alchemy, 1970)

anima mundi: world soul. Plato, *Timaeus* (c. 360BC) 30b-d

E: the electric field **B:** the magnetic field

Et...suo: and the earth will shake. Isaiah 13:13 (NIV)



2 sherman katz gets himself expelled

Sherman Spartacus Katz despised the sun all his life. He called it the Daystar, speaking thereof with contempt, and sometimes spit, and always sweat.

“A century ago, agriculture ceased to dominate our economy,” he urged anyone not explicitly uninterested. “Time has been democratized, the telling of time anyway. Darkness: usurped by the electric lamp.” His manager closed her eyes. “Yet you’d have me in the office by noon like some primitive geocentrist, chanting over goat bones.” Control remained, if only by inertia, firmly with the forces of the diurnal, the oxen of the sun. In admittedly peevish protest he insisted on 24-hour time, correctly citing it as the preferred representation of ISO 8601—that’s an *International Standard*, mind you—and requested meridional clarification whenever he could get away with it.

Your typical software shop puts candidates through a day of four to five whiteboard interviews, an hour per, entirely technical affairs forgotten minutes after filing feedback. The interviewer has favorite questions, asked dozens of times before, and tends to know within about ten minutes how the shit’s going to go down. A coworker called in sick, or had an emergency, or died, whatever; they wouldn’t be able to run their scheduled hour. The candidate’s recruiter mailed Katz, requesting that he cover the unexpected two o’clock hole.

Within ten seconds: “would that be 1400h or 0200h?”

The recruiter swore at her desk, rejoining incredulously, “what chance is there that we’re interviewing at 2AM?”

Katz replied, “ISO 8601’s unambiguous representations make that kind of question unnecessary (probably why ISO chose them).” He scheduled delivery for 1405h, and blackholed further mail from the recruiter. 0200h interviews would be glorious, he thought: the clash of samurai under a soft moon, binary trees reversed in the coder’s hour’s achromatic truth. Do it outside, in loincloth. Not sexualized, but primitive, a contest between titans.

So there at #1 on the list: Earth’s sun.

Death was absurd, incomprehensible, nothing to cheer about, but had at least evolution as recompense. It represented an honest termination, totality, a tallying, not mere maddening Nietzschean recurrence. Infinity is a potent memetic hazard, horrifying in its expanse, subsuming all its contacts. Remember Borges: “There is a concept which corrupts and upsets all others. I refer not to Evil, whose limited realm is that of ethics; I refer to the infinite.” From \aleph_0 to \aleph_ω it is put on correspondences, yet never fathomed; not experienced, only rued: a glimpse of the past curling to become the future, a photon timeless and forever receding. Death was a nemesis as respectable as the Daystar was redoubtable; death was getting its job done.

But sleep? To burn one third of one’s hours—precious, irreplaceable—on hosing down the ol’ neurotransmissional stoop was fury itself. He really only

ISO 8601: International Standards Organization 8601:2004 *Data elements and interchange formats — Information interchange — Representation of dates and times*

\aleph_0 : the cardinality of the natural numbers \mathbb{N}

\aleph_ω : the least upper bound (supremum) of $\{\aleph_n : n \in \mathbb{N}\}$

got up a serious head of work at night, and recalled furthermore no good dreams, not one he was better for having experienced. Most were tedious: waiting rooms packed with uncomprehending children and the braying mad. Disputes with waspish bureaucracies, their couriers delivering forms referencing undiscoverable regulation. Furious callers demanded $\$ \pi$ and enumerated severe penalties for inexact payment. Through labyrinthine asphalt and concrete he rode dismayed and unceasing shotgun along journeys atop complexes of bridges and cloverleaves and roundabouts, nonplanar arrangements necessitating level after soaring level. The topology changed among isomorphic configurations with great swirling roars, their fury signifying nothing, for he knew anyway no destination. In this dream he acquired a Rand McNally: it unfolded into Alexander's horned sphere, and he flung it away with distaste. Drivers rotated through after a night or nights and often there was no driver at all, the unattended wheel following silent stigmergy or curved space or perhaps its own ghostly instinct. During irregular stops at roadhouse skymalls he purchased broadsheets printed dense with hieroglyphics and boustrophedon. Their inks leached through his clothes and subsequent skin; their grainy pages fused into his fingers and like tumors sank new blood vessels. He inquired as to cigarettes, but the clerks exchanged uneasy, knowing looks, replying gravely, "on the way, *werter Herr*, soon; there are tonight bad troubles for the roads." He woke less rested than when he'd bedded down, crusted with salt, breathing the humid evaporates of his own slumberous sudations.

He might in an hour synthesize plodding weeks of oneiric time. These were rich worlds, revealing no ultimate scale, no end of greatness. However deeply he probed, science of dreamspace reproduced that of wakespace. The bandwidth, he marveled, must be tremendous. Should he conjure a powerful particle accelerator to smash ultrarelativistic heavy ions, he'd no doubt dream of quark-gluon plasmas. Drowsy teenage thoughts, listening to Orbital's *In Sides*, reading Drexler's *Engines of Creation* or Wiener's *The Human Use of Human Beings* on the laundry room floor, the coolest place in the house...What of dreams beyond the Hagedorn? Would his sleeping mind supply what those awake could not yet detect; was he Bohm's hidden variable?

Some say that children of the Cold War grew up in the shadow of Hiroshima. That's fatuous nonsense. Little Boy (Los Alamos's "Mark I") was a relatively puny device, best suited for use against an opponent already on the ropes and lacking retaliatory capability. Less than 1.5% of its 64 kilograms of highly enriched uranium fissioned, a yield equivalent to roughly fifteen kilotons of TNT (it's likely that about 0.3% of Fat Man's 120 kg natural uranium tamper fissioned, thanks to the top end of the fission neutron energy spectrum). California's Port Chicago and Staffordshire's RAF Fauld both suffered 2KT ammunition explosions in 1944. The SS *Mont-Blanc*'s 2,653 metric tons of explosive cooked off in Halifax in 1917, where Intercolonial Railway telegraph operator Vince Coleman traded his own life to save hundreds, remaining at his station to broadcast

TNT: 2,4,6-trinitrotoluene $C_6H_2(NO_2)_3CH_3$ 2-methyl-1,3,5-trinitrobenzene

“HOLD UP THE TRAIN. AMMUNITION SHIP AFIRE IN HARBOR MAKING FOR PIER 6 AND WILL EXPLODE. GUESS THIS WILL BE MY LAST MESSAGE. GOOD-BYE BOYS.” The ungainly drag of Coleman’s ten kilo balls tragically prevented him from reaching safety.

A superbolide over Chelyabinskaya dissipated in 2013 at least 400KT as blast. The sables and ermine of Tunguska’s taiga ate shit and died under a 1908 meteor’s eyewatering 12MT airburst. A Mark I detonated at optimal height over the Mission District would leave the Golden Gate standing and the Tenderloin markedly improved. The same device dropped on central Tokyo’s Imperial Palace would scour less area than Operation Meetinghouse’s distributed 1.6KT. To really carve from a megalopolis its heart of steel and glass, to set alight suburban homes, to broil alive in their vehicles panicked families on jammed evacuation routes—if you Gotta Catch ’Em All—you want a meg or two. A quotidian fission device won’t get you there. The necessary plutonium would ensure a predetonation due to neutron flux; sufficient uranium can’t be assembled in time from an initially subcritical configuration.

No, Hiroshima’s most unsettling shadows were the *hitokage no ishi*: silhouettes flashfried onto buildings and steps, delineating regions shielded from thermal pulse by a vaporizing body. Truly eschatological visions rose not from Honshu nor Kyushu, but *Pikinni* and *Kiritimati* and *Ānewetak* atolls (save *Ālloklāp* island; Ivy Mike’s 10.4MT excised it from Earth’s surface, putting it forever out of the shadowcasting business), from the *Novaya Zemlya* archipelago and *Archipel des Tuamotu*, from *Luóbùpō zhèn* in Xinjiang and the Polygon at Kazakhstan’s *Semipalatinsk-21*. Give Teller and Ulam and Sakharov their due, but through the 1950s you were still talking gravity bombs delivered by Tu-16 Badgers and B-52 Stratofortresses, lumbering beasts vulnerable to interceptors and even on Chrome Dome missions hours away from targets.

Mount that meg atop an ICBM or SLBM, and the calculus changes. Less than half an hour after launch, a strategic ballistic missile reenters the atmosphere at well over twenty megameters per hour. To live during the last thirty years of the Soviet Union was to know that at any moment, without ever knowing the reason, a second sun might appear in the sky. Light beyond any light you’d experienced, then blindness, then heat and overpressure, and finally darkness for you and all you knew, all arising from ideological differences, ha-ha, or stupid mistakes, ha-ha again. It promoted a certain fatalism for sure.

The unique irony for children of the 1980s was that the Cold War seemed for all intents and purposes won. This was not the USSR that shattered Hitler’s indestructible armies, but the lummoX whose Afghan misadventures made the world forget for a moment about Vietnam. Soviet music exported no Janet nor Jermaine, let alone a Michael. Solzhenitsyn won the Nobel Prize in Literature in 1970; for this, the home of Tolstoy and Dostoyevsky put him on a plane to Frankfurt after a failed assassination (the KGB used ricin, later successfully

hitokage no ishi: 人影の石 human shadow etched in stone
Pikinni: Bikini **Ānewetak:** Enewetak **Ālloklāp:** Elugelap
Novaya Zemlya: Новая Земля New Land
Luóbùpō zhèn: 罗布泊镇 Lop Nur Test Site
Semipalatinsk-21: Семипалатинск-21 Semipalatinsk Test Site

employed against Bulgarian dissident Georgi Markov). If you didn't have your own NES, there was probably one down the street. Playing *Super Vorkutlag Comrade Bros.* (mine coal, eat Super Mushrooms for caloric content) or *Gosplan Hero* (a central planning simulator) meant waiting until 1992—after the fall of the CCCP—for the Dendy. With that said: Tetris.

OK, Communist cinema had some winners: *Idi i smotri* is an undeniable masterpiece. From Tarkovsky: *Zerkalo* most certainly; *Solaris* if you're into that kind of thing. Eisenstein duh, also the fever heat of poetess Anna Akhmatova, and Mikhail Bulgakov's subtle satires. Gorky? Fine, fine. Socialist realism is a dreary genre, but one can't hate Pavel Korchagin of *Kak zakalyalas' stal'*. Calling Pasternak a Soviet writer seems specious at best. Nabokov? Now you're trolling. The anthem is perhaps the greatest of all time.

The Soviet Union had been created by that most dangerous type of human being: fanatics full of passionate intensity, convinced that they're doing good. No nation that traps its citizens behind kilometers of walls bristling with machine guns and guards is a nation one wants to be a part of, nor is it a nation that can last. The final years of Brezhnev and the interregna of Andropov and Chernenko saw the world's largest country and its ten time zones clearly decaying. Perestroika would soon be at hand, but between Able Archer, FleetEx '83-1, deployment of the Pershing II, SDI, Operation RYaN, false alarms in *Oko* (we can thank Stanislav Petrov in Serpukhov-15 for averting gigadeaths), and the slaughter of KAL007's 269 passengers by an Su-15's AA-3 Anabs, 1983 brought the two superpowers closer to war than any time since at least October 1962. It was clear even then that the Bloc was not long for this earth. The question, and it seemed very real, was whether this ossified system would take the rest of mankind with it when it went.

In high school, Sherman heard a few ladies in Poetry Club discussing with giggles and low voices *The Story of O*. He'd the previous week suffered through a nauseating Pablo Neruda swoonfest from these same girls, and currently held their taste in low esteem. Nonetheless, he was uncomfortable with anyone reading something he hadn't, and that evening at work picked up a copy. He opened it and was quickly disgusted. Ugh, so many piercings. Eveline entered his bedroom, saw it, and swooped down to seize it from his hands. "*The Story of O*? Sherman, why are you reading this? This is a dirty book! Your father gave it to me when we got married, and I went right up to him and said, 'Cassius Julius, I don't know what you meant by this, but if you think I'm getting up to

NES: Nintendo Entertainment System

Vorkutlag: Воркутлаг Воркутинский исправительно-трудовой лагерь

Vorkuta Corrective Special Labor Camp

Gosplan: Госплан State Planning Committee

CCCP: Союз Советских Социалистических Республик USSR

Idi i smotri: Иди и смотри Come and See (1985)

Zerkalo: Зеркало Mirror (1975)

Kak...stal': Nikolai Ostrovsky, Как закалялась сталь *How the Steel Was Tempered* (1936)

SDI: Strategic Defense Initiative

RYaN: Ракетно-ядерное нападение Nuclear Missile Attack

Oko: Око Eye (satellite-based early warning system)

any of this French nonsense, you've got another thing coming.'" She ascended the stairs, taking the paperback with her.

He hadn't been enjoying the book, but this aggression would not stand, and two days later he bought another copy. Eveline greeted him at the front door, and he lost it before it was even opened. He'd exhausted his location's copies, and wrote out an Ingram order for more. It slipped his mind until that summer, at which point he dutifully bought a third copy of this book he thought so distasteful. Within a few hours of arriving home, Eveline found him with it, and pounced. This time he held onto it tightly, and said "no Mom, it's assigned summer reading; I've got to read it."

Dumbstruck: "They assigned you *The Story of O* for summer reading? This is for AP English?"

"Yeah they're doing a theme. Books with letters in the names. We've got to read Pynchon's *V*, the collected Archibald MacLeish, for *J.B.* presumably—that one's a poetic drama, Pulitzer in Drama 1959—*J.R.* by William Gaddis—oof—*A Void* by Perec—"

"What's the letter in *Avoid*?"

"Not *Avoid*. *A Void*. *La Disparition* in the original French. Lipogrammatic—Perec was of the Oulipo school—it never uses the letter 'e.' Very difficult in French, surely a bitch to translate. And then *The Story of O*. I can understand leaving out Čapek's *R. U. R.* and Asimov's *I, Robot*, but I'm honestly kinda surprised she elided Updike's *S.*" Proteus. Books you were going to write with letters for titles. Have you read his *F*? *O* yes, but I prefer *Q*. Yes, but *W* is wonderful. *O* yes, *W*.

"What about J. D. Salinger?"

"That's an author, mom."

"Oh, so authors don't count?"

"Well then it would be anyone with an initial, right?"

She stares at him for a moment. "I doubt this would have happened at St. Anthony's. But I guess this is what you get from the public schools." She leaves, and he explodes with laughter, and returns to the grotesque Reage.

A few hours later with the book long done, he hears "SHERMAN SPARTACUS, get your ass up here." He heads up the stairs, taking two at a time. Eveline stands, livid. "I just got off the phone with the Cobb County School District. Do you know why they called me?"

"They're redoing the physics curriculum and wanted your input."

"No. Ass. Guess again."

"An emergency related to Virginia Slim Ultra Lights."

"No. I called a few hours ago to give them hell about your assigned summer reading." Katz knows what's coming by the time she hits "give them hell," and laughs hard. "Oh yeah, laugh it up, well I told them *The Story of O* is unfit for children. They didn't believe me at first. The nice lady asked, 'are you absolutely sure, ma'am?' and I, stupidly believing you, told her 'oh yes Sherman listed all the books with letters in them.'" Sherman doubles up. It's so wonderful. "Well apparently they agreed with me, because they tracked down your poor AP English teacher on her cheap vacation in Jekyll Island, and that's barely a vacation because Jekyll is strictly trash. They leave a note with her

hotel asking why in the world she assigned you pornographic garbage. So I just got a call back telling me, 'we think someone might be playing a trick on you, ma'am.' And I look like an idiot. And your AP English teacher is going to know you're a liar." Sherman is delighted; the entire ordeal has in a flash been made worthwhile.

"Mom I'm sorry but that's hilarious. Best thing I've heard all summer."

A sheepish smile. "I guess it is kind of funny. Bring me that book."

"With pleasure. I'm done. It was gross."

"You read it all?"

"Finished an hour ago."

"Damn, Sherman, you read fast." She looks appreciative, then grimaces. "Why did you insist on reading that particular book?"

His face grows hard. "I won't have you taking words from me."

* * * * *

The room is dark, the hallway less a source of light than noise. Metal halide floods attending the parking lot defend against lawsuits but provide scant illumination through the high, wide window. The overhead lamp is off, per always. Sixteen meters of T5 LEDs, strung year-round along the ceiling on green Christmastime insulator, are despite their six colors decorative at best. Aggressively rectangular geometry is that of the (bare) mattress writ large. Upon first moving in, Sherman Spartacus Katz had wondered whether it was sized according to the Golden Ratio; measurements proved no. A 24" Samsung flat panel provides an orange luciferian gleam for one side of his ponderous head, but he is ventilating in the finest of fettle, and even without this luminance would be the natural focal point of attentions. A clean shave—he has never indulged facial hair, and is unmarked by tattoos—contrasts with the heavy storm of black curls through which he regularly runs his hands.

Twenty-four years old, he was two days ago cleared for graduation, a narrow thing uncertain right up to the end. He stepped onto campus in the Fall of 1998, a dewy-eyed "junior by hours" thanks to the College Board's Advanced Placement exams. Three semesters in, he was the pride of two different departments. Three semesters after that, GPA in freefall and looking like a prisoner of war, he was summarily invited to leave, to depart, to be gone. To contemplate a still lake while speakers unseen played "Dust in the Wind." To remove his sorry worldline from this Institute of Technology. To disentangle, to decohere. It has been a long, hard climb back. Though he graduates *sine laude* or maybe even *summa cum dubio*, it is with both a BS-CS and a BS-MATH (the former for phat cash, the latter for love), and if a septennium seems a slow and winding path to glory...well, Daniel when exiled in Babylon prophesied a seven-year Great Tribulation, and if this wasn't a Tribulation, what is? Katz knows only pride, and luck, and thanks. *Ave Satanas!*

His class, many of them cherubs several years younger, walks tomorrow at the Coliseum. Katz has consumed most of a bottle of Gran Patron Platinum

scored earlier for this evening's festivities, and any number of shots besides, and has no intention of taking his place among that bovine swarm. Around five in the morning, Alysha will surreptitiously dose him with several milligrams of her alprazolam, and when this semester's Computer Science graduates stand to shuffle under an oppressive Daystar he'll be a third of the way through eighteen unrousable and motionless hours. By Sunday morning, it'll be back to code. Always, always there is code. Code to be made more rigorous, code to be refactored into more sensible forms. Code to be benchmarked, optimized, microoptimized. Code to lucubrate through sunrise. Code to steal sleep, code to take priority over school and family and friends, code with its unrelenting call that can drown out all the rest of life. Die at your terminal waiting for emacs to start, and die thinking of intended improvements of the code. Little hits of warm dopamine pleasure with each item struck from the buglist. But tonight is for revelry: *gaudeamus igitur*.

Outkast's *Aquemini* bumps from M-Audio AV40s. Katz is at times moved to sing along. A hammer pipe rotates counterclockwise among the half-dozen people of the circle, intersecting at two antipodes per circuit with the clockwise path of an absolutely enormous bong. This latter boasts a formidable bowl of intricate design, and beneath that an expensive ash-catcher. Its modularity suggests a military rifle. The substantial salient by which the bowl is grasped resembles nothing so much as a cockspur.

Katz conjectures that there exists an age *A* when one stops naming bongs, but has not yet reached it; he's dubbed this mastodontic bit of borosilicate *Kleinbong*. In America in this two-thousand and fifth Year of Our Lord, fewer than 2% of respondents surveyed recognized the term "Klein bottle." The numbers are quite a bit higher among those visiting this evening, but even there, uncommon are they who can rattle off any working definition: a two-dimensional non-orientable closed manifold, then, constructed (in a space of at least four dimensions) by joining the edges of two Möbius strips. Whether a listener's eyes glaze over or indicate comprehension, he typically plunges forth: "a bong is of course homeomorphic to a cylinder, not a sphere and two crosscaps, but my hope is that this bong has not yet taken its final form. It inhabits a potential well, a local minimum. One day a true warrior will rip from it a hit so beefy, such a thick and savory smokeloaf, such density of krunk, that spacetime itself will be reconfigured like a dank kugelblitz, and what then of topology?" It's nonsense, but sounds good. Katz counts several friends both knowledgeable enough to call him on this bullshit and sufficiently spergy to actually do so. He has identified them, and to them the bong will remain nameless. One doesn't entertain engineers without learning to shepherd fellow dwellers of the spectrum past regrettable *faux pas*.

Electric Sheep renders fractal flames when ncpcpp isn't being used to control the music. With an expired Library of Congress Reader card reserved for special occasions he scrapes together an intimidating pile of powders, combining them, crushing them under a pestle of tungsten carbide, cutting them absentmindedly back into graceful rails. The surface upon which he

plays is a rimmed circle of transparent tempered glass lacking corners that might trap active material. A separate top can be slid into cantilevered grooves, protecting the contents from ashes and sneezes and prying eyes. He'd traded a local glazier a half ounce for it several months prior, and enjoyed bringing it out at parties. The bong came to him from the right just as the pipe approached from the other side, and he was one hand too short, and he spoke sharply.

"What gormless cretin passed the wrong goddamned direction? There are but two rules of smoking weed. It is an undemanding hobby suitable even for simpletons. Pass no bowl that is cashed. Announce instead 'this is cashed,' that it is *tumah*. Better still, repack it in silent charity: *dico vobis quamdiu fecistis uni de his fratribus meis minimis mihi fecistis*."

Electric Sheep changes phases, its tint shifting from orange to damson.

"And secondly pass always to the left, as Cypress Hill did before you. Parallel transport. Intersections such as this one are provably impossible assuming equal velocities among bowls. This powerful result is independent of angular momentum. Would that bowls were subject to superposition and perhaps in the next world they are but alas this is an imperfect world and I can smoke but a single bowl *B* at a given time *T* especially whilst preparing nose drugs for the benefit of all. We are not executing Floyd's algorithm for cycle detection. I will pass both pieces to the left in succession. After I hit them."

Fuck, "parallel transport" is a well-defined concept in differential geometry. Will anyone call me on it? He eyes the circle warily. Fisk and Choudhary have taken relevant classes for sure. Doubtful that anyone but possibly Michael has read Egan's *Schild's Ladder*, nerdcore triumph or no. Remember that paper that referenced the LBJ slogan? "All the way with Gauss-Bonnet."

"Sherman my brother, what scapest thou? Does thy apothecary thrive? Help me to not sleep this night." Beloved comrade Devesh Choudhary has been flown back from UCSB, where he is in the middle of a gnarly PhD in lasers. Katz finally asks a question that's always bothered him.

"Desi Devesh, what was it about Gujarat that left you talking like a King James Bible? Are you not a student of the heathen and polytheistic Mahābhārata? Suck you not the balls of Garuda, best of birds? Will you not like Arjuna play the Kṣatriyaḥ and uphold dharma? Did you learn English from *Dragon Warrior*? Thou hast been F'd in the A by an Axe Knight. Thou art dead."

"Brother Sherman, I rep my desis but put on for my gujjūs. And thy knowledge of the Hindu epics is as shallow as it is vulgar. The Mahābhārata is neither catechism nor consuetudinary. Hinduism is a holistic philosophy, undevoted to torturing points of reductionist theology hoping they might yield universal truths. Semiotic haruspices pick among the rubbly morphemic smashings of divine memetic colliders searching for hints of the Higher Mysteries. Thou puts too many faiths in words, the inventions of men, into semantics."

tumah: תומא ritually impure

dico...fecistis: I say unto you, inasmuch as ye have done it unto one of the least of these my brethren, ye have done it unto me. Matthew 25:40 (KJV)

Desi: देशी person of the subcontinent (friendly) (from Sanskrit देश *deśa* land)

gujjūs: ગુજ્જુ Gujarati (sometimes friendly)

“Hail Eris, all hail Discordia. I’m not arguing religion with you Devesh, just wondering whenceforth this Jacobean ‘thou’ horseshit.”

“The matrix of first-order partial derivatives of a function?”

“Christ. Arjuna. Krishna. ‘Jacobean,’ not ‘Jacobian.’ James the Stuart. Middle English of the *Ormulum* variety was long gone. *Of Engelond, to Caunterbury they wende* and they came back speaking something you can understand.”

“Is that not the Elizabethan?”

“Elizabethan follows useless Tudor. Marlowe and Spenser. Shakespeare, of course, who straddles both.”

“What comes after Jacobean?”

“Caroline.”

“What was the house of Caroline?”

“For Carolus. Charles. Carolus. These things generally refer to a single monarch. Charles II is Carolean. What are they teaching in the schools?”

“Forgive my ignorance of ancient aristocracies of an empire that oppressed both our nations, reduced now to NATO’s biggest aircraft carrier. In Indian schools they are teaching electromagnetics. But I recall mention only of ages Elizabethan and Victorian.”

“Because both those bitches lived for about a hundred years. The Caroline era ended with the untimely decoherence of Charles I.”

“Decoherence?”

“His wave function collapsed.”

“In what way did the King of England depart from unitarity?”

“He was decapitated by a genocidal Calvinist.”

“And presumably observed as well. In Gujarat we have Hindus, yes, but also many Moslems and Zoroastrians too. Baghdadi Jews. My family regresses towards a Laodicean mean, but the exonymic Hindus of my state do appear rather more content than many Americans. What drugs hast thou there?”

“Devesh, you looking to get wild tonight?”

“Always thou knows that I am with it and for it.”

“Gentlemen and m’lady—and why aren’t there any more girls here why must y’all move like flocked sausage, Bolaño excepted for obvious reasons of gay—I have here a small sumptuous mountain of what I call methamketacaine, or I suppose ketacophetamine, full IUPAC designation methamphetacokaineamine. Mostly. There’s also some 2C-I, traces really, nothing to worry about.” He holds aloft a glassine bag and squints with suspicion. “I considered adding this mysterious powder, sold to me as LSD tartrate. But I trust it not. I suspect it to be 25I-NBOMe, a new phenethylamine active—and dangerous—in the microgram range. If anyone wants any, feel free. I intend to run it through a spectrometer.”

Michael shook his head and sighed, making a note to bitch at Katz later. Katz heard him, and grimaced.

Of...wende: From England to Canterbury they travel. Geoffrey Chaucer, *Tales of Caunterbury* (The Canterbury Tales c. 1400) Prologue 16

IUPAC: International Union of Pure and Applied Chemistry

2C-I: C₁₀H₁₄INO₂ 2-(4-iodo-2,5-dimethoxyphenyl)ethan-1-amine

25I-NBOMe: 2-(4-iodo-2,5-dimethoxyphenyl)-N-[(2-methoxyphenyl)methyl]ethanamine

"Yeah they never made it clear what machine they were raging against, but I assume it was a mass spectrometer. Anyway, no enigmatic and potentially toxic powders. But I did dump in the last of my synthetic mescaline from that batch last year. About a half gram. It ought definitely put some glow on everybody. I'm debating whether I want to eat acid. More accurately, to bust a big squirt of liquid directly down my throat in a Delta Force-like assault on my 5-HT_{2A} receptors."

He looked down from his Aeron to Alysha, sitting to his left on the bed.

"What of you my love? Wanna dose hard tonight? I only graduate once."

"Do as you wish; I work in the morning. I'm expected at the law library. You barely slept this week, though—are you sure you're down for heavy hallucinogenics?"

"Ahhh, wise observations. Just monstrous lines of combined stimulants, then, and of course ketamine for that wavy hazy feeling-kind-a-bowling-ballish disassociation."

"I'm definitely open to that mean mixed grill, though."

"Oh shit is somebody cooking? Do we have human food?"

"That heap of nose drugs, idiot. Blow some and pass it. Or just pass it."

"Ahh of course."

In walked Greg Moyer: casually disliked, tolerated in business, fratmax to the core. He handed to Katz a bottle of Moët White Star bearing a pink bow.

"Congratulations on finally graduating after seven years. Didn't honestly think you'd ever go back and do it."

"Nah I wasn't going to go through life without a degree."

"Why does it even matter? You already had the job."

"Because I'm not going to be a degreeless asshole. Beyond that, I'm the only cracker of my cracker-ass family to go to college, and I wasn't about to let them give me shit about it. Much less take shit from bitches like you."

Up go Moyer's arms. "No shit from me, Katz. As I said, congratulations. How many grades did you have to hack in and change to get out?"

Katz's first thought is "withering look," but he promotes it *gratis* to "contemptuous" and then "disdainful." He settles magnanimously upon "thin smile." The decision tree is run before any motor neurons fire; there is no indication that he ever felt other than bemused tolerance.

"Don't even joke about that. The last thing I need is for Tech to come after me with allegations of academic misconduct. God knows there was enough of it going around, especially in CS. I don't get it, personally. CS isn't exactly conceptually overwhelming, and you're gonna need to know how to do the shit on the job. But whatever. Actually, there's a story I don't think I've ever told y'all, or anyone. I suppose having now graduated college—"

Danny Fisk leaped up and yelled YEAAAAAAAAAAAAH!

"YEAAAAHHAHAHAHAHAHA!—I can relate the tale now. One minute."

He ripped a tremendous hit from the Kleinbong, hove up a hale line, and passed the felonious farrago along to eager Alysha.

"So around the end of tenth grade, I realized that if I didn't get expelled, I wasn't going to be able to go to college." He paused. It's a Startling Claim; let it sink in. Let everyone get comfortable. Turn the music down. "I'd maxed out

the PSAT early and skipped a grade so I wasn't too concerned about college, right? Everything was easy. *Rien n'est simple, mais tout est facile*. Then I got a modem, a k-shitty 2400 Hayes. That was an 8086 so this is pre-ISA bus, pure 8-bit expansion card—"

"Yo the whole difference between 8086 and 8088 was that the 8088 chopped the bus down to 8 bits. 8086 could use 16 right?"

"Ja but the physical interface was only eight. The 16 was for memory. There was this company Olivetti that built, like, the Lamborghini of eighty-eighty-sixen clocked on a then-baller dekahertz with custom sixteen-bit slots that could accept the full buswidth. Then ISA came out a few weeks later and did the same thing, except completely incompatibly and with support from companies beyond Olivetti, which is why you've never heard of Olivetti. Fucked to death by the Industry Standard Architecture."

Michael: "Intel really fucked you on the encodings for IN and OUT, too. A legacy of eight-bit immediates and the now-useless EE byte."

Alysha in quick succession: "Olivetti is like a century old, dumbass. Don't you have a boner for Burroughs? There's an Olivetti Lettera 22 in *Naked Lunch*."

"Michael." Katz holds up a single finger. "I will reply to you momentarily. Alysha, I have read *Naked Lunch* like fifty times and nowhere in there does the word Olivetti appear."

"It's in the Cronenberg movie. Which I have *insisted* that you watch."

"You can identify make and model of typewriters by sight?"

"You can't?"

"You amaze me every day." He kisses her; they're both smiling. "Bolaño, all that went to MMIO pretty quickly, though, right?"

"Sure, but you're not reclaiming opcode space."

Alysha speaks up: "The group rape perpetrated by the conquerors is a metonymic celebration of territorial acquisition."

Heads turn; Moyer is the first to ask. "Did you just say group rape?"

"What Michael said about not reclaiming opcode space, it just made me think of Spivak's essay, 'Can the Subaltern Speak?' I remember reading it and thinking well shit, I nominate that for Grimmest Use of 'Metonymy' or Derivative Thereof in a Sentence, 2001. Have none of y'all boys read it?" She pauses. "No? No Spivak, no Cronenberg. Disappointing. Read her introduction to *De la grammatologie*, which is basically like you've read *Grammatologie* itself, since Derrida is unreadable and everyone just goes by what she wrote in said introduction."

"Is Derrida really that bad? I thought what I read of Foucault was reasonable enough. *Discipline and Punish* was solid."

"What do they have to do with one another save both being French? They hated one another, actually. And Derrida was born in Algeria, like Camus."

"They both signed Sartre's petition to fuck little boys."

"Wait what?"

"Basically all the French philosophers less Camus petitioned the *Assemblée nationale* in 1977 demanding catamites. Deleuze, Barthes, it was a whole thing. General strike of the poststructuralists. *Sous les pavés, la plage!* Simone de Beauvoir signed likewise. She didn't want to fuck boys so much as she'd become thoroughly disinterested in fucking Sartre. All those lobsters."

"I thought Hell was other people. No, it's these goddamn crustaceans."

"Well who knew. So yeah a piece of shit. But at least it was its own IC, not like the Winmodems that followed, which were barely a bare DAC and string and could be relied upon not to work in Linux ever. So I get the modem and stop giving a shit about anything. Might as well have been smack—"

"That's what The Mentor said back in *The Hacker Manifesto*, right?"

"Michael I can always count on you to catch my Phrack references. Though the article's actual name was *The Conscience of a Hacker*. Common mistake by those who don't know what they're talking about. OK everybody shut the fuck up; I've got the floor. So this is 1993 or 4, eighth grade, right as transcripts start to count, and suddenly I'm bringing home all Cs and Ds. All my time is spent exploring BBSs, then getting into the leet scene, and suddenly having access to documentation and other computer people—we were still pretty rare then, right? So I'm suddenly learning all this shit I'd been wondering about for years. I got Ralf Brown's *Interrupt List* and that alone, it was like holy shit, I burned thousands of hours as a result of that tfile. Fundamental leap forward as a programmer. Because I'd never had the books, or anyone I could learn from. That Ralf Brown list was available as a book—if you had forty dollars, which I did not. Well that's when Zell Miller set up the HOPE scholarship, which required a 3.0, and I realized well fuck I'm three-eighths of the way into this bitch with not but shit. I might not even get *admitted*, even if I turn this ship around, which I don't really want to do anyway. Well, I'm doing lots of wardialing during this time. All flows from *WarGames*, right?"

Nodding is general. *WarGames* was pivotal for much of present company.

"I hack up a dialer in Turbo Pascal and later find Mucho Maas's ToneLoc—"

"You liked to do the wild thing!"

"Yessssssssss. Well one of the things I found out early is that phone numbers tend to evidence a degree of spatiotemporal locality. If you order a few at once, I'm guessing they're clustered, until the exchange fragments up anyway. I notice that the FAX number for a school is just the voice number plus one. This pattern holds as I experiment with a few local high schools. So I dial around these numbers, and on every Cobb County school I try, there's at least one modem answering right around the voice number. Now these hosts do a standard V.8bis handshake—I've got a 14.4 USRobotics Sportster now, so I guess V.32bis—but it's all garbage. I make a note of them and move on. A few weeks later I'm playing with Norton pcAnywhere. I dial in raw to the remote machine, and hey, it's just the same garbage as those numbers. I use pcAnywhere to touch 'em, and boom, game recognizes game. Default creds are admin/password, but no dice. I had however nothing if not time and, like,

Sous...plage: Under the paving stones, the beach!
HOPE: Helping Outstanding Pupils Educationally

BBS: bulletin board system

big sperg energy, and within a few days I hit on the school's name plus "0000" as the password across all these machines, presumably configured by some braintrust contracted countywide. I think that's probably the first remote intrusion I ever pulled off. So I'm looking around for merry mischief, but each of these guys appears devoted to little more than management of a 'Nortel Meridian.' Interesting!"

"Ahhhhh, was that a PBX?"

"Word is bond. I gather this from the somewhat opaque configuration software, and get super excited—I didn't know much about PBXen, but I knew you could dial out from them. So I've presumably got a proxy to cloak my own phone number during further explorations. Maybe even make free long distance calls, which would add some real cachet to my underground status. I was doing some cracking by now; Razor hadn't picked me up or anything—"

"You were in Razor 1911? Badass."

"Never a full member—Razor is strictly European so far as I know—but I did a few jobs for them. I mainly worked for Prestige, Fairlight, INC. Dude, if any of y'all played the four-disk release of Warcraft II, you most likely played my crack. DEBUG.EXE all day long, old-skool. So I immediately make myself a new admin-level account on each box and set to exploring this mysterious new delight. I figure out how to dial through, and how to permit toll dialing, but don't want to run up a bill and get noticed. I just slink in at night and read the online help. I learn how to change their hold music, but I'd need physical access to hook up an input—it's not like you could upload MP3s in 1995.

Anyway. My untimely lack of academic rigor at good St. Anthony's. We get a transfer student mid-semester from Oregon or some fuckin' place with a military school. We're talking and he mentions that he'd failed his mandatory first-period Theory of Marching and Saluting or whatever, and I'm like, 'hey how does that work on your transcripts? As we good peaceful Catholics lack firearm-related classes as a rule, what happens? Do you have to submit multiple transcripts to colleges?' He laughs; it had become an F in Boy's Chorus, surely the first. So there was the key upon which I seized. Change. Turn. Transfiguration. Metanoia. Impermanence. The Heraclitean river of grades. Everything is fire, and don't you fucking forget it." Katz has grown loud; the methamketacaine is doing its work forcefully.

"What was thought set in stone could clearly be altered. I call up some random school, maybe Sprayberry, and ask 'we're pulling mah boy out of private school and live in this district. What need we to do to enroll him? What goes on with his transcripts?' I'd unthinkingly assumed there was some state-level or even national clearinghouse to which grades were dispatched, staffed by shuffling Reagan-class functionaries with dead eyes, unifying and leveling across various districts, cantons, parishes. Nah. When you change schools, at least then, the old one FAXes or mails your transcript thus far, whereupon Chaldean sorcerers in the front office chant on it and their informed word is *ex cathedra*. All pretty laughable, integrity- and authentication-wise. I'm kinda

shocked transcripts aren't being doctored on their way to colleges all the time. Maybe they are.

So you see where this is going. Sure enough, the school FAX is configured as a Direct Inward Dial on the Nortel, and sure enough I can forward incomings to another, external line. So there's the classic man-in-the-middle redirect. Of course, I'll need to somehow bounce traffic into the real FAX, and am wondering how exactly to do that without a third number, but it turns out you can set up rules based on incoming characteristics. That weekend, I do a test run. I forward all incoming traffic to that number to my home number, except for when it's coming from my home number—that goes through. I call a friend and have him FAX to the listed school number. Boom, my FAX gets it and prints it out, and I grab it and dance a fuckin' jig. Now I send the same number a FAX, and it is not redirected, and I'll tell you that was about the most badass I'd felt in my life. Barbaric yawp shit. I go back in and remove the redirect and wait for my dick to soften and ponder this whole kettle of fish.

I was in the Turner Classic district, and they're a pretty good school. I knew from having our asses thoroughly whipped that their academic bowl team was phenomenal. Football was pretty shitty, but by that time I knew I wasn't exactly going to be making a career out of defensive line, and would just as soon avoid another two seasons of dehydration and summer camp in Valdosta, Georgia's Hadean seared asshole, and getting run over by fucking piledrivers of men from Tucker and Woodward in the name of good Catholic sport. The twice-daily journey between Marietta and Dunwoody would be likewise unmissed. I had few friends down there. My parents bitched at me about the money and driving as if it hadn't been their call in the first place. So I had no great attachment to St. Anthony's. Hell, we weren't even Catholic anymore. But having attended four years, they weren't about to pull me for the last two. I was still drawing my academic scholarship despite overall academic ineptitude. So it would have to be an expulsion, but not one that would involve police or lawsuits, or get the two schools talking. I needed something that would embarrass them, to which they would want to call no attention whatsoever, and wouldn't feel obligated to pass along.

So what does your typical religious order not like to talk about? Of what speak not the clerics regular? Abortion for sure. The dangerous lives of altar boys. Limbo, the game perhaps but definitely the doctrine and how it was kinda just made up *ex nihilo*, deficient of Scriptural backing. *Auto-da-fé*. Popes both Warrior and Anti. Indulgences."

Alysha volunteers, "let's not forget Copernicus. *Eppur si muove*."

"Well that was Galileo, but yes."

"Galileo spoke Latin?"

Bolaño responds to Fisk with contempt. "That's Italian, you illiterate."

"Jews!"

"Well Moyer it's interesting that you bring up the Tribe. Did everyone who wanted some of the methamketacaine get some? A little more for the graduate, I think. On one hand you have self-loathing Constantine. 1096. 1147.

1251. 1320. The Edict of Expulsion in 1290. Cryptojews. Torquemada and the Alhambra Decree. Ferrand Martinez. Edgardo Mortara. The Church did not cover itself with glory during the Holocaust. On the other, *Nostra aetate* at Vatican II. *Quamvis Perfidiam* during the Black Death. Pope Gregory I was I'd say a wash, semitewise. Your modern Church definitely wants good relations. Of course, you could count both the Jews and blacks at St. Anthony's on your fingers. We had a horrible Cultural Appreciation Day where these kids were made to go in front of an uninterested and pissed-off student body and talk about matzah and the AME. Poor bastards.

A few weeks into junior year, me and a local buddy make a big-ass sign. Easily readable from the road. We do it all up in red, white, and blue bunting, patriotic as hell. Big crucifixen on either side. Along the top are headshots. We've got Pope John Paul II, Mike Tyson, JFK with his brains still in, poor Rosemary Kennedy with her brains reduced to Tuna Helper, Belinda Carlisle, Ayatollah Komeini, Anita Bryant, all the hits, plus our headmaster with a halo. They're having a hell of a conversation. Underneath it, in tasteful golden calligraphy, we letter 'St. Anthony's School and the Atlanta Archdiocese remind you this 29th Week of Ordinary Time'—"

Devesh looks gleefully horrified. "Oh nooooooooooooo."

"Then in big red letters 'KEEP ABORTION LEGAL.' Next to it the *Beata Maria Virgo* in full mandorla, attended to by Gabriel with holy horn, and the speech-bubble, 'Virgin birth or GTFO.' Underneath them, *sic transit gloria mundi*."

"You did not. That's absurd. That got you kicked out?"

"Well then underneath it, all impeccable lowercase italics, 'pregnancy is a jewish plot!' And finally 'Audentes Fortuna Iuvat,' our school motto. Fortune favors the bold, bitches."

"Noooooooooooooooooooo."

"Yes! Stolen from Robert Anton Wilson. We go put this up early Saturday morning in the soccer field next to the road, working in the dark. I called the local media and some synagogues, leaving messages mostly—it was probably 5am. By the next afternoon my parents are called at home. I'd let people see me print out those headshots in the computer lab, and I'd assume they had cameras on campus as well.

I don't plead innocence. I say it was just a joke, a prank, and if they want I can come remove the sign. I am told absolutely not to come onto campus Monday and likely beyond. They talk to my parents, who seem more confused than anything. My mom asks, 'but what do Jews have to do with abortion? Is it because so many are doctors?' I told her yes.

The fix was in. The next day we were told that I would likely be expelled. Had I anything to say for myself? Only *Pater dimitte illis non enim sciunt quid faciunt*. The head of their priestly order was in on the call, and he was Old School Church; he knew the Latin just fine and started into language quite

Nostra aetate: "in our time"

Quamvis Perfidiam: "despite the perfidy" papal bull of Clement VI

AME: African Methodist Episcopal *Beata Maria Virgo*: blessed Virgin Mary

sic...mundi: thus passes the worldly glory

Pater...faciunt: Father forgive them for they know not what they do. Luke 23:34 (KJV)

unbecoming of *sacramentum ordinis*. Early Monday morning they call, inform us that I can either withdraw that day, or be expelled, and that they'll ship the contents of my locker. I am *persona non grata*. Anathema. Excommunicated! My mother asks whether tuition will be refunded, and is reminded that I'm on a full ride. She asks how that makes a difference. Towards the end of this unfriendly exchange, we're told to call them and let them know where to FAX or mail my transcripts. And I smiled."

"I gotta say, Katz, that was a pretty stupid plan."

"I was a pretty stupid kid. But hey, things had worked out so far, and I really wasn't in any worse situation than I had been. Better, all told. But now the tricky part. We go over to Turner Classic and my dad, torn between wanting to kick my ass and delight at never again needing drive down to Dunwoody, tells them 'uhh we're not Catholic anymore, so he's your problem now.' They demand immunizations and certificates of birth and ask us to have St. Anthony's FAX over a transcript, here's the number. Mwahahahaha. I go talk to a guidance counselor and spec out my current classes. I tell him my test scores and his eyes get big. He asks my GPA and I'm like, I don't know, pretty good, I've had a few Bs. He's pretty much swooning as he shakes my hand and reminds us to get that official transcript FAXed this week. I start classes tomorrow.

So this hack looks like it's actually going to all come together, right? I've got my pristine transcript, a transcript you'd be proud to take home and show the folks. Scanned in an unofficial one and copied-and-pasted glyphs among the document. All I need do is log into their Nortel, turn on my redirect, watch the FAX machine, manually forward any other FAXen that come in unchanged, and interdict the St. Anthony's call. Log in again, clear the redirect, leave no traces. Nothing expected will be missing. St. Anthony's can confirm they sent it if called. Turner Classic can confirm receipt. Even if things are somehow exploded, nothing points to me."

"Well except call logs. If they subpoenaed BellSouth it would show calls from you to their box, and the PBX probably had logs all its own. For that matter, pcAnywhere probably did too."

"Fortune favors the bold. No one was getting a subpoena even if they compared notes. The cops would have laughed them out of the room. No way are they investigating PBX logs and shit. Or I guess maybe they could have. But they didn't. I could have done a lot of things smarter but c'mon, I was only 15. And remember, no one knew shit all about computers back then. All of this makes sense to us—"

From Alexei Orshanskiy, a Ukrainian so cachectic and angular that he looks only somewhat human: "Gonna interrupt you there. I've not been able to follow for a minute."

"Well goddamn it Alexei what threw you?"

"Fuck is a PBX for starters. Pterodactyl bitch extractor? Fucked if I know."

"Private branch exchange. What let you run your POTS. Plain ol' telephone service over the PSTN—public switched telephone network. These days anyone

halfway hip is running Asterisk. Back then you got a few lines or some ISDN, maybe a T1's worth—1.544 megabits per—and managed it as an appliance. Let's roll. I effect the diversion. I call up St. Anthony's and tell them I'll be going to Turner Classic, and could they go ahead and send over my transcripts? I offer to provide the FAX number to them, but they say they'll get it themselves, and that it'll be done this afternoon. Give them credit: they at least weren't just accepting whatever random number someone quoted at them. Now, if they exchanged any verifiable details verbally, I was fucked. I was going from just over a 2.0 to a 3.9-plus. A meteoric rise. Go big or go home. I had no real defense for this, and wouldn't know if it happened. Didn't even think of it until after I called. Hail Eris."

ATLiens ends and is followed by Company Flow's *Funcrusher Plus*.

"I'm bound to the FAX machine until things go through. None of the forwarding is automatic. Within about fifteen minutes, there were two unrelated FAXen I had to put through. The frequency surprised me. What if I had to take a piss? The last thing I wanted was for some front office disneybot to start fucking with their FAX machine or the PBX. I realized that if they rebooted the PBX, my configuration changes would be flushed. Fuck! I was freaking out a little. What if they'd been tracking me this whole time, and were just waiting to bust me at the moment of peak illegality? The Secret Service could be sweeping even then into my front yard. Shit, if my room got searched, what all was in there? I looked out the window in total dread. How all had I fucked up? In what ways had I fucked up that I didn't know about? That 'guidance counselor' had probably been a fucking federal agent. Never having heard the term 'honeypot' I at that moment conjectured honeypots. A ring indicated another incoming FAX; I screamed before feeding it through.

Then the 'in use' light goes on. But there's been no incoming call. That means...shit, that means someone's using the phone in my house. No bueno. That'll put up a busy signal. Too many busy signals implies a call asking why. A call asking why implies fuckery and even investigation. I watch for it to go off. One minute. Another. Goddamnit. I charge upstairs and find my mom on her phone with Bible study materia spread around her and just about vomit. Bible study calls run approximately forever, with lengthy eyes-closed prayers and cross-indexing of Halley's NIV Study Bibles and the good ladies getting their rigor on for the Lord. 'Mom? I was going to use the modem. Could you possibly get off the phone? Please?'"

"Shhh! I am doing Bible study! Use the modem later! Go think about stupid abortion signs and getting kicked out of school!"

"The good Lord, acting through a loyal if unknowing servant, had speared me through with His great barbed thorncock. I raged silently at the heavens. You play your games, Jehovah. I shall play mine. This call would have gone on for an hour or longer in the absence of drastic measures."

"Mom I'm gonna drive to the store real quick and get some imitation crab meat.' Recall that I am at this time fifteen and quite unlicensed, not to mention

ISDN: integrated services digital network

T1: Transmission System 1, 24 channels up to 1.544 Mbps

sans car. She actually chuckles at me. I go to her purse on the bed, look her in the eyes, unzip it, and remove her keys."

"Sherman have you lost your mind put my keys back in my purse and put my purse down. Sherman I will beat you and have your daddy beat you and homeschool you with the Maynards' retarded boy down the street. Sherman Katz I will burn every book in your bedroom if you walk through that door. I will *blind* you. SHERMAN!"

"I was almost at the front door when she slammed down her heavy receiver and began her descent. I head off to the garage, where my mother arrives, breathing hard, absolutely apoplectic. She opens the door to her little Renault, lowers her head in like a tyrannosaurus, yelling 'where are you, you son of a bitch, have you lost your mind?'"

"Mom?"

"Sherman. Spartacus. Katz. What the hell are you doing? What has made you crazy? You are dangerously close to some very serious mistakes, young man. You've already made one with your dumb prank. Give me my keys."

"'Here you go, mom. I'm sorry.' I'll admit to some tactical tears around this point. 'Mom, I do, I feel so crazy recently. It's like I'm not the person I used to be anymore. And I don't like the person I've become. I think I've left God's love and turned my back on Him and that's why, and I'm not sure He's ever going to admit me back into His grace.' I cede some general issues with my mother and that by choice I am not the closest son I could be, but give the gal credit, she comes running over to me with a big hug and the kind of honest simple love that made me feel almost sad for fucking with her like this. 'Baby the Lord only wants us to accept His love, and He is ready for us to do so at any time. We can always go to our knees in prayer and be heard. And your father and I will always love you, too.'"

"Can we go to our knees now, mom?"

"I'm so glad you asked, Sherman. Let's do so."

"She goes there in the dirt of the garage to two fully bended knees of supplication. I genuflect, and hold one hand. The other she'd raised with a palm upturned towards the garage door opener."

"Heavenly Father, we go to You in prayer to ask for Your help with Sherman. He has erred and sampled from the carts of Vanity Fair, Lord, he has put his faith in computers and Harper Lee and Ferris Bueller. He has known pride and gluttony and avarice. Sherman do you confess that you pollute yourself?"

"Ummm, if it's going to be that way, I do confess it, Lord. I flog the dog and festoon the balloon and covet my lab partners' asses."

"Just girls though, right?"

"Yes mom, Lord, just the girls. The redheaded ones, those in tall socks, big-breasted WASPs wearing tight winter sweaters, goth girls with serious thighs and short skirts and bangs, the casts in toto of *Clueless* and *The Craft*—"

"Yes, Lord he has known lust for women and all their lascivisions—"

"Lascivisions?"

"Nominal form of lascivious, asshole. Don't make fun of my mom. You sling enough lascivisions around, people are gonna call you lascivious. The Lord knew what she meant. 'Their lascivisions, Lord, You know they're little

trumpets at that age. My son seeks Your wisdom and grace and love. He seeks Your Light. Sherman, will you throw away those Butthole Surfer tapes?"

"Well how are those related mom—"

"Sherman think for one minute. God asks so little of you. Have no other gods before Him. Honor thy mother and father. Take not His name in vain. God created your butthole. God created the oceans. One's for surfing. One's not. Do you think Butthole Surfing venerates God's creation, or mocks it? The entire concept is obscene and warped."

"I guess it depends on why—"

"Father, give Sherman wisdom, small dumbass wisdom sufficient to know Heaven is closed to Butthole Surfers. No wonder they kicked you out of that school. No wonder you're getting Cs and Ds—"

"Mom?" I touched her shoulder. We're both freely crying by this point. 'I think things are starting to heal. I see now. How could I have thought otherwise? I chuckle at my own mindlessness. I think I'll take God's gift of eternal life over the Butthole Surfers. Gross. Will you help me destroy those tapes?'"

"Sherman I've wanted to destroy those tapes ever since you brought them home. Every time I've looked at you since then, I think 'there's something called Butthole Surfers in my house.' I've prayed on it so many times."

"Your prayers are gonna be answered tonight, mom."

"Heavenly Father, hear our prayers. See my son's devotion to Your plan in not just words, but actions. He's going to try to lose some weight, too, Lord. He knows you didn't give him a healthy body just to let it get all chubby and stand around with bad posture like white trash. Drive out the demons inside him that would lead him to make crazy signs and stay on the computer all night. Amen. I'm so happy, Sherman. Tell you what. I've already missed a good bit of Bible study—but for such a joyous cause! Go inside and say a prayer of your own, and then you can go ahead and use your modem until we eat."

"Awww thanks, I really appreciate that. Let me know if you'd like any help cooking, and when I ought set the table."

"Two FAXen had spooled over the duration. One was mine. I stood trembling, loaded the *maskirovka*, dialed, transmitted, slotted it home. I logged into the PBX and removed the diversion, rebooting it for good measure. The next day I showed up at nine AM, asked for my schedule, bit my lip, and stared into eternity. They brought me a list of classes and said that my transcript had been received. 'Very nice, by the way. We're happy to have you here.'"

"I'm happy to be here."

"What are your goals for these remaining two years, Mr. Katz?"

"To shoot craps with the Universe, and win. I should go. Thank you."

"I walked to AP American History seventeenth in my new class's rank, eager to learn, eager to make good on this second chance, benignant and radiating wanton innocence. Joined their academic bowl team and moved quickly to the front, displacing a longtimer but hey, that's life in the big city. Kept my GPA high enough to secure HOPE and end here. Dropped a perfect SAT—god bless

maskirovka: маскировка deception, usually military

standardized testing—and took twenty-three AP exams. So I like to think of it as correcting what would have been a freak error.”

The night goes on, the apartment waxing heavy and happy with guests before they begin to thin out around 0200h, all according to the whims of the Poisson. A thoroughly pixilated Katz stumbles out into the living room in his underwear. “It smells like sex out here. I got two degrees today motherfuckers. Can’t hold me down. Only Turing can judge me. Imma piss in the sink.”

He strides purposefully to the kitchen, climbs onto the counter, and does exactly that. With no small élan he executes an Elvisesque pelvic swing. Now two. Now three. With an awesome crash he drops through the serving hatch onto the living room floor. Two chairs topple down with him. The table falls and begins to rotate slowly along its elliptical edge. One Robert Ng is there, and reaches down to lend assistance. “Yo Katz, are you ok?”

Katz leaps up, hooting all the way. “I never trusted that motherfucking table.” He vomits with some force, lights a Newport, and returns to his bedroom, giving high-fives as he goes. Some land. More miss. He looks back before shutting the door. “My errors are volitional, and the portals of discovery! Bachelor of Science, hobags!”

What remains is the chaos, the table tracing out its epicycloid in the carpet, the rapidly dissipating smoke. From behind the door come sex sounds almost as cheerful as they are imprecise and impaired, not quite masked by Amy Grant’s *Heart in Motion* playing louder than anyone present has heard Amy Grant played, or will hear her played in the future.



3 michael bolaño indulges in small pleasures

Stately, slim Michael Luis Bolaño attended Katz's hackalogue—he'd not heard the tale before—accepting it in its main points, feeling idly dubious about some details. Whatever its veracity, Michael thought it foolish to relate such a story. There was no percentage in it. Was he convincing those present of his intelligence? Everyone here knew Katz to be possessed of scintillating brilliance; he needed win none over. He had arrogance in spades, but it was earned confidence in his abilities, not that mien of belligerent pomposity which so readily betrays insecurity. Passing on knowledge? A night's entertainment? Tell the facts; claim no personal involvement. Katz was fundamentally sloppy. He had faith in some essential decency of the engineering class, though he'd likely deny it if put the question baldly. Bolaño knew better.

Friends become enemies. Confidantes break confidence for money, or for attention, or under torture, or due their unthinking stupidity. *In vino veritas*. A secret may be revealed but not untold. Knowledge like entropy grows only more general, a kind of Second Law of the furtive. Michael had never lacked a keen sense of self-preservation. He sometimes suspected that Katz had none at all. It made him less than an ideal partner in the Trade. At the same time, Katz's undisciplined extroversion and exuberance had been a necessary element of building up their enterprise, and no thinking man would deny that the son of a bitch had skills.

Still. Talking about using mass spectrometers! Say some grinning listener, perhaps that insufferable Greg Moyer, mentions to his fuckhead frat brother that Katz claimed to be testing drugs using GC/MS. Frat brother gets picked up retailing rohypnol. He calls daddy's lawyer but lacks the sense and/or balls to wait on counsel's appearance. Cops tell him he's looking at twenty years, not just possession with intent but also conspiracy to sexual assault. Tell us what you know and maybe we keep a leash on the District Attorney, maybe we don't seize your parents' house in Buckhead—oh you poor deluded dipshit, have you never heard of civil forfeiture?—maybe we don't replace your world of popped collars and Coldplay concerts with jailhouse tats and mandatory tuberculosis testing, don't guide you headfirst and trussed into a buzzsaw for which we work the treadle. "Well I know this guy Sherman Katz is into all kinds of shit. I heard he fucks with mass spectrometers." APD notes it down in a book, and later an entry goes into NADDIS on the DEA's Firebird intranet. Months later, some head gets busted with Devesh's ecstasy in California. They don't know our names, but they know it came from the southeast. Precious few inhabitants of the Mississippi Delta with cause for a mass spectrometer. Bolaño and Katz surrendered the privilege of careless speech some time ago, a hard fact he found himself forced to emphasize again and again.

Bolaño had required no changes to his grades. His transcripts recorded an inexorable march through the Texan high school curriculum, his lowest mark an A- in some horseshit geology class. He demonstrated no special pride in what

NADDIS: Narcotics and Dangerous Drugs Information System

had been, after all, an effortless saga. Asked the secret to his success, he would have sneered, and marveled with no feigned incredulity at others' laughable incompetence. He was never seen to study, but unlike Katz clearly cared enough to demonstrate mastery of the material, despite free hours dedicated almost entirely to computing and his own intense course of reading. He wrestled and ran cross country; he gave up soccer after being passed over for Lamar's varsity in the ninth grade. Michael Luis Bolaño saw no value in participating in activities in which he would not dominate.

He knew he was gay as soon as he knew much of anything, and announced it matter-of-factly in 1993. This was a move of some boldness for a thirteen-year-old Latino in Texas. His mother Rosemary screamed, but quickly regained her composure, biting her lip and looking to his father. On cue, the elder Luis came out of his chair with a bellow, lunging towards Michael.

Even at thirteen he'd stood a head taller than stout Luis. With sighing sangfroid he sidestepped the charge like a matador, catching Luis in an armlock. Looking his mother in her eyes, he spoke softly, holding Luis wriggling and impotent. "Shhhh. Calm yourself, *mon père*." The young Bolaño's *français* was better than his *español*. "Shhhh. *Ça suffit*. This is all a dream. Your second son will fuck girls to ensure them a special *quinceañera*, and their *abuelas* will say knowingly that he learned from his father, a real samurai cocksman. Just a dream. You have not in one generation ruined a great family. You didn't buy your first son a ridiculous Lamborghini. He never smeared himself and this car you did not buy him across a highway divider. A dream. *La familia es todo*. Bills marked Final Notice do not fill the mailbox. Your wife sheds no tears for what has been lost; she never dreamed love would never die. You loved your second son, the son you never drunkenly beat to feel for a few pitiable seconds what it is to be a man. You inspire this second son, his heart bursting with admiration for the father you never were. Your son didn't anticipate your pathetic sound and fury. Your son is in no position to shatter your plump arm, should he so choose. Your wife, mother to your sons, isn't hoping that he does, and isn't thinking of her hundred black eyes. I will release you now. Raise a hand to either of us again, and I'll kill you."

Luis spun to face him, sputtering. Then the light in his eyes went out. He hung his head and took his seat, shuddering. Rosemary looked upon her husband with loathing, and got up. "Mother, take a *siesta* in the day room. You're so beautiful. Luis, you appear unsteady. Let me pour you another *mezcal*."

Full of flinty and unyielding insolence, he burned with resentment for the authority placed in his inferiors, particularly teachers. He was detested by the Lamar faculty, who spoke of him behind closed doors with disdain and fear. Suspicions were muttered and allegations alleged, but given the absence of any real evidence, he went unaccused of major infractions. Any number would have loved to put him in his place, but assigned work was inevitably turned in on time, expertly completed, dripping with contempt. Lamar's principal

mon père: my father
abuelas: grandmothers

Ça suffit: that's enough
La...todo: family is everything

quinceañera: fifteenth birthday

seethed knowing that this haughty little shit would likely emerge first among the Class of '98, and began searching during Michael's junior year for plausible reasons to eliminate the standard valedictory speech at graduation. Bolaño accepted their antipathy and looks of distaste with smirking grace and derisive confidence, painted a wider target on his back, and cultivated unmistakable excellence as a means of protest.

With that said, he felt in no way constrained to the "silence, exile, and cunning" of Stephen Dedalus. During his sophomore year, he authored a recurring column of not more than 250 words in the semimonthly school newspaper. He wrote it somewhere to the right of the John Birch Society, a kind of gleeful Dark Enlightenment anticipating Hans-Hermann Hoppe and Nick Land and Moscow's *eXile* tabloid. Anyone who asked got a hard stare, and finally a languid assertion that, duh, "it is clearly satire: did you ignore the touchstones to Rabelais?" Responding to the vexed principal: "To Swift? To Aristophanes? Is it possible you have"—eyes widening here—"not read Aristophanes? C'mon, the column's title is 'Tex-Mencks.'"

"I've never understood the title, actually."

"You've heard of Tex-Mex? The cuisine?"

"Yes."

"You've heard of H. L. Mencken? The author?"

"Yes."

"If you say so. What has happened is the 'Mex' has been replaced with 'Mencks,' establishing a reference to aforementioned satirist. Under my own power I provide all the Mex we need. I'm not sure what else you want to hear."

"Michael, I'm going to read your last two months' titles out loud."

"A chrestomathy! But your English is...passable? A quartet of pleasures, I'm sure. I know them by heart. Please proceed."

"Three Generations Weren't Enough After All: Revisiting Eugenics."

"A scathing conceit on our State Legislature's public housing policy."

"Unsafe at any WPM: Against Universal Literacy."

"Routing lottery revenues into public schools is undeniably regressive. No one wants to hear this truth. The numerate class is made to feel guilty. Their complement is made to feel still more stupid than usual."

"Killing Fields or Common Ground? In Defense of the Khmer Rouge."

"If you had grown up Rouge instead of—I'm spitballing here, Baptist?—you'd think Christmas the crazy tradition. I ain't got no quarrel with them Khmer Rouge. I refuse to hate a man simply because we've had instilled different beliefs regarding autarky, agrarian collectivism, and the significance of spectacles."

"I see—"

"By 'spectacles' I mean eyeglasses, not rousing struggle sessions against those chaps who dare to thwart the revolution."

"Excuse me?"

"It's on the gate at *Tuol Slêng*."

"What?"

"Security Prison 21. The Hill of the Poisonous Trees. If you're going to learn just two words of Khmer, they're not a bad choice."

“Too Many are Born: *Cameral* and—’ what is this word, is it a typo? ‘*Cameral* and...whatever this is...concerns in an Age of Vaccines.”

“Dr. Blish would be sad to hear it. *Oeconomic*. I learned about Cameralism right here in your own school’s AP European History.”

“I think it stinks, Michael. I think you’re playing a lot of people for fools.”

“Their foolishness manifests without my help.”

“I think you’ve got a really bad attitude.”

“In the sense that foolishness is presumably some scalar having minimum value zero, indicating an absence of foolishness. Not quite wisdom, mind you. This isn’t that kind of scalar. Thus is measured their *dinge an sich*. I feel stupid even asking this, but”—he takes the shot—“how much Kant have you read?”

“I’ll be watching you.” *¡Goaaaaaaaaaaaaa!*

The column had largely lost its luster anyway. The next issue, he submitted “A Case for Antisemitic Zionism.”

“Hrmmm, what’s this exactly? ‘Israel is a necessary ally where America has few, but this only makes its Jews a greater strategic liability, quite independent of their qualities as a people *ceteris paribus*.’ I’m not sure we can print this.”

“I am skewering here *reductio ad absurdum* the ‘socially liberal, fiscally conservative’ mantra of the Libertarian Party. Social liberty is after all an impossibility without economic justice. Have we learned nothing from Dr. King’s ‘How Long? Not Long.’?”

The newspaper’s faculty advisor nodded. She was usually unsure what Michael was talking about, but was absolutely certain that she’d learned something from Dr. King.

That would be Michael’s last “Tex-Mencks” column.

* * * * *

Despite being one of the most competent *científicos* of Mexico’s fin de siècle *Porfiriato* technocracy, Michael’s great-great-grandfather Gustavo had opposed General Díaz following the contested elections of 1910. He supported Madero until the inept display at Casas Grandes. The exhilarating news of Pancho Villa’s victory at Ciudad Juárez was tempered with patrician revulsion at the demagogue’s bloodthirstiness. Zapata and the Plan de Ayala were sources of horror. Trapped in Mexico City during *la Decena Trágica*, he came to despise revolutionary violence almost as much as the meddling of Sherburne Hopkins. He sided like most of the bourgeois with the Carrancistas, helping to draft their manifesto at Hacienda De Guadalupe and also the *Constitución Política*. He was conservative regarding the *ejidos*, suspicious of the Church, positively venomous concerning gringo interference, and determined to make Huasteca Petroleum and El Águila truly Mexican: Article 27 was largely his own.

Gustavo Bolaño and his son Antonio relocated to Garza García outside Monterrey, and began prospecting in the Chicontepec basin of Veracruz. They

dinge an sich: things-in-themselves. Immanuel Kant, *Kritik der reinen Vernunft*
(A Critique of Pure Reason, 1781)

ceteris paribus: holding other things constant

científicos: “scientists” advisors to President Díaz

Porfiriato: Mexico under Porfirio Díaz

la Decena Trágica: the Ten Tragic Days

ejidos: communal land with usufruct rights

bought up its sandstone cheaply, proved hydrocarbon reserves in 1926, and sold the land at great profit to Royal Dutch Shell. Overnight, he became one of Mexico's ten richest *ciudadanos*. Almost concurrently, *Ley Calles* went into effect, enforcing the anticlerical Article 130 and leading directly to the Cristero War. The Bolaños engaged in profitable speculation and extraction through most of this conflict raging to the south.

In 1935, with the Depression at its peak, Antonio brought to San Antonio his nine year old son José López. "Look," he guided José, disembarking onto a platform from the International-Great Northern Railroad; "look around you. Here a quarter century ago Francisco Madero took refuge from the tyrant Porfirio Díaz, whom your grandfather helped overthrow in the *Revolución*. And ninety-nine years prior, fifty years before even your grandfather was born, Santa Anna won the Battle of the Alamo here. The Americano William Travis exhorted his treacherous Tejanos *no rendirse, muchachos!*, and swore that he would have victory or death. Our dragoons gave them plenty of the latter, to a man, and in doing so drove every able-bodied Texian to enlist. At San Jacinto, Santa Anna—also an Antonio!—a few weeks later lost the war, and with it *Coahuila y Tejas*. And now we Bolaños, people of the sun, have arrived." He squeezed his son's hand.

They deposited ten thousand *pesos plata*, just under the \$5,000 FDIC guarantee established in the previous year's Banking Act, and traveled north into Texas Hill Country. There, in sight of staid granite domes and caverns of the karst, they purchased a large tract of savanna suitable for grazing, and much of the limestone hill it bordered. Over the next month, Antonio interviewed agents, finally selecting a gifted *gerente* and authorizing him the power to hire men to clear trees, men to build roads, men to construct a manor and to make ready fields and to bring herds for butchery. Over the hacienda they erected three flags: the American with its forty-eight stars, the lone star of Texas, and the tricolor *bandera*. "Look to our flag, my son. Our seal was sacred in Tenochtitlan, once the greatest state of this continent. When this republic's ancestors were dying of plague across the ocean, serfs to a hundred squabbling kings, yours took tribute from one end of the land to the other. Challenges were met by ten thousand *yāōquízqueh* warriors, until no one living dared challenge the *tlahtoāni*. The proud *águila* perched atop a *nopal*, clutching his rattlesnake prey in talons and beak, like *Huítzilōpōchtli* wielding the *atlātli* *Xiuhcoatl*. Our legacy from the Aztecs. The prickly pear bears fruit, representing those good things within the earth, available to anyone who would but bend down and take them. Like the oil extracted by myself and your grandfather. One day you and your family will pursue our interests in this country, on this land, among

Ley Calles: 1926 law hostile to the Catholic Church

Tejanos: Mexican settlers of the Republic of Texas

no rendirse, muchachos: don't surrender, boys

Texian: American settler of the Republic of Texas

Coahuila y Tejas state of First Mexican Republic

pesos plata: silver Mexican coins

gerente: manager **yāōquízqueh:** "those who have gone to war" Aztec footsoldier

tlahtoāni: "one who speaks" ruler **águila:** eagle **nopal:** prickly pear

Huítzilōpōchtli: Aztec god of the sun and war **Xiuhcoatl:** fire serpent used as a weapon

these people, but your line is that of Techichpotzin, daughter of Moctezuma Xocoyotzin. This you must never forget."

He did not point out that Techichpotzin was later baptized Isabel, nor that she carried to term the child of conquistador Hernán Cortés. He privately doubted that their ancestry could in any case be meaningfully traced across four centuries of Colonial Mexico. Likewise, no attention was called to the three flags' relative heights, that the Lone Star fluttered well above the deferential Golden Eagle. Parenting, after all, is already hard enough.

Seeking to relieve the overcrowded San Jacinto HS, the Works Progress Administration began construction of a new school in Houston. In 1937, that school would be opened under the auspices of Houston's powerful Independent School District as Southwest. Before the academic year ended it was renamed Lamar. Sixty years later, Michael Luis Bolaño would be its star student.

But soon there was tragedy in Monterrey due the Cristeros. Gustavo, now a respected and benevolent engineer graying at his temples, Gustavo who had seen so much in his fifty-two years, was in 1939 lynched by a gang of Catholic assassins. His hand in the hated 1917 constitution had not been forgotten. While delivering an address encouraging Mexican neutrality in the coming European war, men in dingy serapes dragged him away from the lectern. One smashed his glasses underboot; one with a hammer crushed his right kneecap. With laughter they cruelly took his ears, then cut deeply across his throat as he strove like a crippled crab to crawl away. He cursed them as fanatics and as brigands, and swore that in hell he would fuck their daughters, but never called to his timid countrymen, and indeed none moved to help him. Committing his soul into the hereafter, he struggled to cry *¡que viva México!*, but managed only to cough and sputter into sands reddening like Oaxacan cochineal with his life's blood.

The Depression had slammed shut the agribusiness exemption to the Emergency Immigration Act of 1921, bringing to a halt most Mexican immigration and leading to mass repatriation of laborers. José López assisted Antonio: promises of industrial investment to their Texas banks were made in his excellent English, and accompanied by sizable wire transfers. These were forwarded along with letters of recommendation to the necessary representatives, who forwarded them in turn to the recently created Immigration and Naturalization Service. Palms were greased along the way, but the sums required were hardly objectionable. Six Alien Registration Receipt Cards arrived without overmuch delay in Monterrey: two for the twin daughters Xevera and Zita, born in 1940; one for José; cards of course for Antonio and wife Valentina; finally a card for widowed Guadalupe in her black rebozo and huipil, who seemed now to speak only in prayers and wailing protests. They were assured that naturalization would be a painless and quickly forthcoming matter. The living Bolaños took up residence in their compound in October 1941. Gustavo—what was left of him—was buried in his beloved Monterrey, but Antonio commissioned a tasteful cenotaph for the grounds.

Their new country was soon at war. Antonio had registered as required upon entry, but could expect a III-A dependency hardship deferment. Dependency exemptions were eliminated during the manpower crisis of 1943, but

Congressional action ensured that fathers would enjoy the lowest draft priority; Antonio continued to breathe easily. José López, however, turned of age in 1944, and as a declarant alien became liable under the Burke-Wadsworth Act for military service.

Executive Order 9279 ended both voluntary enlistment and the lottery, entrusting local boards with administrative selection. A family of the Bolaños' resources could arrange a deferment if so desired, but José López, descendant of Moctezuma II, never asked, and Antonio never suggested it. June of that year saw Eisenhower and Montgomery crash into the five beaches of Overlord, Clark capture an abandoned and open Rome, Saitō's defeat following a month of nightmarish fighting on Saipan, and the annihilation of *Heeresgruppe Mitte*, the dreaded Army Group Centre under Ernst Busch. This last was accomplished during Konstantin Rokossovsky's Operation Bagration; the Polish-Russian had only in 1940 been brought out from Leningrad's Kresty Prison, where he'd suffered since being swept up in the prewar *Yezhovshchina*. He made a gift to Stalin of 57,000 German PoWs, marched through Moscow Square in the Parade of the Vanquished. It also saw José drafted into the United States Marine Corps "for the duration of the conflict plus six months."

José was bused to MCRD San Diego at Camp Elliott, only to hike thirty-eight miles to the newly-constructed Camp Pendleton. A lank, mild, intellectual Mexican-American was there received into the 5th Marine Division, and became a nameless Recruit. An Irish boy from Denver threw back sass while still standing on his yellow footprints, and was suddenly aloft, hurled laterally, brought to a wet and ponderous stop when his face struck the wall. He slumped heavily into an unlikely position, moving only in the spasmodic twitches indicative of profound brainfuckery. The two meanest nurses José had ever seen emerged, showing this limp form onto a stretcher, yelling all the while. Drill instructors addressed him at phenomenal volume not just as the expected greaser and beaner, but also chunt, Mexican't, roach, pool-digger, and once even Private Chalupa, a whole rich vocabulary of pejorative that seemed to flow independently of the platoon's performance.

He passed the Initial Strength Test and subsequent PFTs, learned to make a rack, fought with pugil sticks, and cleaned his rifle incessantly. On his fourth day he vomited, and was directed to sign the puddle with his finger. During one of the innumerable sets of pull-ups, he brought his chest to the bar, blanched, and explosively emptied his bowels. A salient of chunky scatnectar was already creeping like warm bisque down his calf by the time he dropped, dazed and horrified, to his feet. In a moment the DI was upon him, huge and apoplectic, campaign hat eclipsing the sun. "Jesus Christ recruit! What the hell was that movement? Did the private remember an appointment in Tijuana to audition for Greased Asshole Number Three at the donkey show?"

"This recruit has shit himself, sir!"

"Explain your undisciplined turdcutter!"

"This recruit's asshole lacks military bearing, sir!"

"Remove your befouled PT dress and get the fuck back on that bar!"

Yezhovshchina: ежовщина period of Yezhov

He proved more than capable with the M1 Garand, just missing Expert with a Qualification score of 301. Judo felt natural; the M5 bayonet was simply divine. With his company he slogged through the hated “boondocking,” close order drills performed in deep sand. He wore his gas mask into a chamber dense with chloroacetophenone, and was then ordered to remove it. It felt for hours like hot glass had been ground into his eyes. Grenades he thought destitute of intimacy, almost gauche, wholly lacking the *je ne sais quoi*. It was fun to let loose a salvo from the BAR or M1919, but he correctly surmised that most of his work would be with the semiautomatic M1 and its *en bloc* clip of eight rounds. During the penultimate week he saw two men of his platoon dragged out from a foxhole by the treads of an obsolete M2A4. One was unhurt save for his left arm, found largely intact a few meters away. The mess from which his scapula protruded resembled a bag of mulch, overflowing with grass and detritus. The other private, caught traverse, had been neatly hemi-corpectomized, his pelvis pressed into earth like *bas-relief* upon which his legs emerged and lay. Their screams were inaudible over the roar of twin diesels.

By the end of the compressed seven-week training, he'd added almost six kilos of tough muscle, toasted to a shade of brown he'd never seen before, and he wondered upon which Pacific outcropping he would first kill another human being. There was no Family Day, no Graduation with its motivational run, no Warrior's Breakfast nor retiring of the guidon. The company's three platoons instead marched seventy clicks down the California coast to Gen. Pickett's newly-formed Amphibious Training Command in Coronado. For a fortnight they trained there in amphibious assault, effective deployment of cargo nets, medical evacuation, and the joys of throwing flame. It was thought that they might embark for Peleliu or Angaur, but Forager was more or less wrapping up when they boarded rough Liberty ships bound for Hawai'i's Camp Tarawa. During two months on the Big Island, their destination was known only as the generic “Island X.”

Not until October 2nd was the Navy's preferred target of Okinawa approved over the Army's Formosa. The decision went in their favor due partially to Army Air Force Gen. Henry “Hap” Arnold's desire to deploy fighter cover out of a holm of the nearby Bonin-Volcano archipelago. Adm. Chester Nimitz was instructed to select and seize some saltatorial appetizer on the way to the Okinawan main course of Operation Iceberg. Planners assumed the Marine divisions allotted to this Operation Detachment would be available for wholesale reuse. Lt. Gen. Tadamichi Kuribayashi, an unorthodox and elegant man known for his haiku, made industrious, even brilliant use of the months available to him: defenses were exquisitely prepared when the first LVTs deployed their Marines on the largest of Japan's *Kazan Rettō*, 21 km² of chthonic brimstone pushed above the waters by a caldera's resurgent dome and called *lō* by the Japanese. Today this is transliterated as *lōtō*, but often still mispronounced as it was February 19th, 1945: Iwo Jima.

The landing was preceded by nine months of intermittent bombardment from air and sea. There was little response from on-shore batteries or the

Mitsubishi G4Ms of the *kōkūtai*. Navajo code talkers reported to Pearl that the island's defenses appeared suppressed, and predicted easy formation of a bridgehead. The ten days prior to landing were thus afforded less bombing than the Marines requested. Later, Holland "Howlin' Mad" Smith would bitterly excoriate the Navy, and claim that this decision cost thousands of lives. In truth, the 21,000 men of the Imperial Japanese Army's 109th Division had long since gone formican, laying mines, presighting mortars, and tying together pillboxes, machine gun nests, trenches, camouflaged artillery positions, and bunkers with eighteen kilometers of tunnels. Some of these were more than thirty meters underground, untouchable by any munition short of a nuclear warhead in earth-penetrating configuration. A fourteen-inch battleship shell could have set off half a tonne of Explosive D overhead in a direct hit without Kuribayashi's subterranean staff noticing. PFC José López Bolaño landed with the first wave at 08:59 Tokyo Standard Time, emerging from his LVT with M1 in hand and twenty-five kilograms on his back, eyes squinting against the tropical sun, expecting a hail of spigot mortars and Arisaka 7.7x58mm, and the inevitable banzai charge.

He heard only birds, and lazy naval aircraft, and the 5th Division.

Americans swam ashore to the base of Mount Suribachi, stumbling from ocean up onto land, recapitulating in uncertain lunges a journey completed four hundred million years ago by their Silurian ancestors. Progress was jarringly punctuated by the explosions of landmines, sending skyward coastland and pumice and feet. It seemed nonetheless that the Navy had accomplished its task; some of the men grinned as they brought up endless cargo. José was concerned by the tall slopes of volcanic ash, clearly impassable by Amtracs. Likewise the gray pseudoplastic beach, a real rheological conundrum, too insubstantial for firm footing yet at the same time too wet for even a cathole. Attempted excavations flowed back to level the minute you looked away from them. José was about to seek his platoon sergeant's thoughts regarding shitting when the E-6's face came off his skull.

Kuribayashi had allowed several thousand Marines—the better part of the 13th and 28th Regiments—to collect on the beaches, which served now as abattoirs. Machine guns opened up from behind every hummock, mowing down a substantial fraction of V Amphibious Corps. Exposed officers were targeted by snipers and nothing wearing chevrons lived through the initial fusillades. The chatter of automatic weapons masked artillery erupting inland, but not the impacts nearby, and the beach seemed one wide impact. Every Marine hit the ground, shot and/or hoping not to be shot. Mortars screamed across the sky, whining before they exploded, launching jagged steel through stomachs, through shoulders, through scrota. José scanned for targets behind a mist of rifleman concentrate.

The story of Red Beach 1 and 2 and the struggle to Airfield No. 1 has been told (as best it can) elsewhere. Suffice to say that the Marines in Joe Rosenthal's Pulitzer Prize-winning photograph barely fought on their way to Iwo Jima's highest point—the Japanese were too smart to expose themselves on the naked

face of a mountain. José seemed touched by an angel through that first week, essentially unhurt as men perished all around him. With the cleansing fire of an M2 flamethrower his platoon was purifying one of hundreds of caves, the heat palpable and close to overwhelming twenty meters back. Its operator staggered and crumpled, and the others advanced with grenades. Then José felt his shoulder explode, and his vision went dark, and it was his turn to crumple, and he prepared to die.

He regained consciousness to find his right arm immobilized, his thighs wrapped in bandages, his bladder fuller than it had ever been, his mouth tasting like death itself. A WAVES came over to him quickly.

“What is this place?”

“Naval Hospital Pearl Harbor. You made it. Welcome home.”

“I was shot?”

“The surgeons extracted two bullets from your shoulder, and some shell fragments out of your thighs. You’re very lucky they didn’t hit the artery.”

“Can I walk?”

“You ought be able to get up now. Careful—you’ll be weak. The doctor is more worried about the shoulder, the axillary nerve particularly, but doubts you’ll have any permanent loss of function.”

“Excellent. Please point me towards a lavatory.”

Within a week he was back in Camp Tarawa, rejoining the 5th Division less their 2,482 KIA, a literal decimation. There they stayed through the final months of World War II. The headlines of the August 7th New York Times could be read across the room:

**FIRST ATOMIC BOMB DROPPED ON JAPAN:
MISSILE IS EQUAL TO 20,000 TONS OF TNT:
TRUMAN WARNS FOE OF A “RAIN OF RUIN”**

He had seen the 1939 *Nature* article describing nuclear fission. Before the cover page reached him, he’d worked out the same crucial point Leo Szilard realized crossing a London street September 12th, 1933: an uncharged neutron, repelled by neither electron nor proton, strikes the nucleus of a heavy atom. That atom splits into two or three smaller ones (these carrying a great deal of kinetic energy), and also a few neutrons. Should one of these neutrons fission another atom in turn, why, that’s a self-sustaining chain. Should more than one fissions result, that self-sustaining chain grows exponentially. Should it grow for more than a few iterations, with these energies, that’s a self-sustaining apocalypse. *Delenda est Japonia*. Thank God, he thought, this horrible war is over and I can go home.

Expedited naturalization meant citizenship for José before he’d even left Pearl. In four years total he studied petrochemical engineering at the brutal Colorado School of Mines (participating in the Ball Heist of 1948), and acquired a masters in mechanical engineering at the Georgia Institute of Technology.

WAVES: Woman Accepted for Volunteer Emergency Service

Delenda est Japonia: Japan must be destroyed. Cato the Elder in *Senātus Rōmānus*

He married Lillian Marin, one of the most eligible young ladies of Houston, and she was soon with child. He proved a shrewd engineer, and later a still shrewder manager and investor. When his son Luis was ten they moved at Lillian's prodding to the Bayou City, just in time to weather Hurricane Carla. Undeterred, the Bolaños funded repair and development in their new home, alongside the construction of Houston Intercontinental, the Astrodome, and NASA's Manned Spacecraft Center. Soon they were refining right there on the Gulf's coast, and Antonio handed José more and more of the growing business. They prospered.

By the time spoiled Luis departed for the University of Southern California, the Bolaños counted among the patricians of Houston. They took membership at River Oaks, and the annual Christmas party at their house in Memorial was attended by the highest society. Two younger siblings followed Luis: a brother mously studying drama at North Texas, and a callipygian sister at LSU on a softball scholarship. It took a year longer than expected—Luis was not a particularly strong student, and Los Angeles in the early seventies offered many distractions—but he narrowly graduated with a degree in statistics in 1974. He joined the family business, where his work was unexceptional. Luis was unctuous to those above him, and toploftical otherwise. José, normally discerning in business and relationships, was blind to his son's faults, and held him in undeserved esteem.

He might have reached more correct conclusions in time, but time was not on his side. José's first flight following certification lifted off from ACT, heading west. He got off a few hours later than planned, by which time a foreboding supercell had formed over the center of the state. In his forty-first hour behind the yoke, he received a NOTAM: flash flooding and hail had shut down receiving at SJT. Midland International was too distant; Abilene would involve cutting through the worst of the squall. José took a deep breath and called into ABI for a distress landing; they wished him luck. He flew low over US 277 with barely fifty meters of visibility. A black walnut tree reached up unseen as he banked right. His Skyhawk's wings disintegrated. He fought to free himself from the burning cockpit, but smoke accomplished what the Japanese couldn't.

From swerve of shore to bend of bay we recirculate then to Michael Luis Bolaño, second (and now only) son of Luis and Rosemary, accidental scion, heir to a misspent fortune, aristocratic in bearing. Last hope of a house from which glory departed, and last to be known by its name. His early reading was broader even than that of Katz. Asked in his first, privileged years how he would spend his days, he quoted Theodore Roosevelt: "I intend to be one of the governing class." By middle school he'd consumed most of Mortimer Adler's Great Books (*Tom Jones* he found simply too boring to finish; Freud he dismissed as a charlatan almost immediately). Dexterous enough with mathematics, he rarely felt the raw dopamine surge known to its devotees: the fundamental theorem of calculus was neat, sure, but contained less in it than any page of Wittgenstein's *Tractatus*. He mastered several languages under

thickly accented private tutors. At fourteen he got into computing, attracted less to the involuntional *l'code pour l'code* Rubik's cubology of computer science at its hardest core than the higher feats one could accomplish with the machine. It was for him a tool, not a shrine.

One spring morning at a library computer, he began to type his password, and wondered how he might know whether the login program had been subverted. He concluded that there existed no way he could do so. Neither could any other user, were he the one doing the subverting. Replace this humble authenticator, then, and he could silently glean credentials.

Ctrl+C didn't break out of the login prompt, which came up automatically on boot. Alright. He logged in and formatted a bootable 3.5", and checked out AUTOEXEC.BAT. Yep, there was LOGIN.EXE at the bottom...and break=off at the top of CONFIG.SYS, meaning you couldn't Ctrl+C out of the MS-DOS boot, either. He rebooted, and watched for the floppy's access light. No dice: it booted directly through to the hard drive. Huh. BIOS was...protected by a password. Oh well.

The next day, following some time with the manual, he rebooted, held down Shift+F5, and was dumped to a friendly C:\> prompt. Never doubt the awesome power of reading the documentation.

He wrote a reasonable mimic of the Novell Netware login prompt in Turbo Pascal. It welcomed you to Lamar High School, accepted a username and password, added them both to a hidden file on the local hard drive, and then passed them on to the real LOGIN.EXE. Then the grimy work of weaponization: a script installed the trojan from floppy, recovered the captured password file (if it existed), hid it with ATTRIB, and modified AUTOEXEC.BAT if necessary. Tagging a dozen library machines required less than a half hour.

Over the next weeks he observed several teachers using the compromised workstations. These included his mawkish, vapid British Lit teacher; in class he noticed that her room contained no computer. If she had no computer here...they must be able to enter grades from library machines. My machines. Well then. He harvested his credential files, and descended to a corner machine in the downstairs lab. There was her name among the pilferage, and her password from that day, and that was Michael's first successful intrusion.

A simple semigraphic menu offered InteGrade or MS-DOS Prompt. His eyes lit up as he selected the former and saw exactly what he'd hoped: four sections of BritLit, "Independent Study: Anne Brontë"—which unfortunate lesbian requested *that?*—and something called "Remedial Writing." Heh. Ghastly. He pondered what use he could find for changing that semester's BritLit scores. A footer advised that in addition to F1's "Help," F2 allowed one to "Change semester"—hey now—and that F3 promised "Other classes." *Que?* He jammed F3 and gasped: there for the pleasure of his scrolling selection were dozens of classes, probably every class being offered that semester.

"What's up MLB?"

Michael smashed Ctrl+Alt+Delete and turned. "Steve, hey. Precious little. Did you bring it?"

"Precious little huh? Look at you rebooting as soon as you hear me. C'mon Michael. I'm your priest. Were you back here jacking it?"

"Padre Esteban, it is true, whilst daydreaming of your mother's honeyed orifice, the sacchariferous path to all her pleasure, I gifted this PS/2 with my hot Hispanic essence. I fear the machine might no longer boot."

"Disgusting. Four Hail Marys. Yeah I've got it. Bathroom?"

"I'll take it from you at the end of the day."

"Or you could take it now, so I'm not walking around with two smelly Zs."

"Don't have cash on me, my friend! In the car." Michael had the \$500 in his wallet, but no desire to carry around a class B misdemeanor longer than necessary.

"Ahhhhh ok. I'll meet you at three then. As a gay man, wouldn't you have been daydreaming of my dad's asshole?"

"Only you dream of your dad's asshole, Steve. Gotta scoot."

Through the day he pondered his happy discovery. His own transcripts could hardly be improved, certainly not in any way worth the risk. Other transcripts, though...success would hinge on two things: potential customers couldn't talk, and actual customers couldn't get caught.

Approach T people with an offer of services. P is earned for each of W who buy, where $W \leq T$. Total income of at least I then requires $W \geq \lceil \frac{I}{P} \rceil$. Risk grows as $C_0T + C_1W$. I think the power to modify grades is worth at least \$20K. Why not. How many rich kids are in need of such a service? How rich are they?

The usefulness of a grade change was obviously nonlinear. Just that year, the Texas Legislature had passed House Bill 588, guaranteeing admission to the state's fine public universities for the top 10% of every high school's graduating class. To someone at 11%, the shift of a few hundredths of a point could mean the difference between UT-Austin and Lone Star College's North Harris County campus. To someone with a 2.12, it meant fuck all. There was some $\Delta_{VS} \geq 0$ between valedictorian and salutatorian; a change $C > \Delta_{VS}$ likely meant a great deal more to that supernumerary student than it did #10.

Risk was similarly complex. Ideally, rather than selling the service of improved grades, he would sell strategic reductions in the grades of others. If all you cared about was top 10%, it was enough that those above fell back, and no one whose grades actually changed could then name him. Alas, anyone whose GPA dropped unexpectedly was likely to inquire as to the reason, undoing his work, probably exploding the whole racket. Older grades were probably seen less frequently than newer ones. The more useless and dysfunctional the teacher involved, the less likely anything would be noticed. Less raw movement meant less impact to statistics. Try to avoid changing leftmost digits—humans would mark 2.99 to 3.0 more easily than 3.31 to 3.41, despite being an order of magnitude smaller. If a teacher had left since posting the grade, no way that was coming up in anything short of an authentic audit.

He realized with a gleam that he'd been wrong about the statistics. Less raw movement did not necessarily imply less statistical movement. If I bump someone up from a C to a B, the class average is held constant if someone else eats the inverse change, as is the letter grade distribution. Standard dev...yeah

stddev can still change. Eh, no one has time for sigma anymore. Now, the kind of person who gets As is more likely...this is ludicrous. The necessary adjustments cannot meaningfully affect class-wide statistics. This nonsense would double the number of people affected. *Fool.*

So find five marks close to that 10% threshold. They needed moral turpitude, liquid assets, and to be able to keep their mouths shut. His ideal customer was a devout Longhorns fan who had in freshman year suffered a few too many Bs and Cs in classes taught by known imbeciles or, better still, the recently deceased. He figured five heads at \$4K a throw, a tidy and tax-free twenty large. He went to the parking lot early, and evaluated its ostentatious vehicles while waiting for Steve. Fuck that, he thought: five a head.

None of that mattered to automated analysis, though. Any kind of auditing would fuck him proper. Shit, just decent *logging* could ruin things. He could not yet speak meaningfully of risk, but he could investigate. He needed a plausible sacrifice...Keith Liddick. Junior class president. Handsome simpleton. Gifted basketball player. Ineffective linebacker, but full of heart. Likely future Auburn attendee, maybe minoring in that Golf Course Design program they had. Common dicksuck. Spends a lot of time around the front office and at school in general. Burn him.

Within five minutes, Keith Liddick's transcript was just as humble as ever, class selection-wise, but clear of the 10 Cs and two Ds he'd racked up in two and a half years. Changing them all to A- boosted his 2.76 to 3.40. Ahhh, Keith, we've done great things for your sad story of Remedial Algebra and, Jesus fucking Christ, "Life Skills." The sun beats down on a brand new day for you.

It happened right after midterms. First, rumors that Liddick had been called out of class. Confirmed sightings of Keith Liddick wildly gesticulating and quite possibly crying across a table from multiple grim, unsmiling faculty, known high-level ballbusters. Vague talk of scandalous accusations and undignified Presidential confusion. Appalling abuses of trust. Threats of disciplinary removal from the student body. Counterthreats from Liddick Senior, Esq., a Skyline District litigator who wasted little time demonstrating ballbusting powers of a truly, like, wizardly nature, one Vice-Principals would never know. A wide-eyed report claimed Pa Liddick rattled off torts with a thunderous voice, and all who heard it trembled. Timid retreat on the whole removal thing, a misunderstanding we're sure, never a consideration. Keith is one of our finest students. Ahhh, we have just been informed that the error was ours. A problem of data entry. Come and see us whenever you'd like, sir.

A final petulant observation: your correct GPA, Mr. Liddick, was a 2.76 and thus you are ineligible for student government, participation therein requiring a Three-point-Zero, it's written right there in the student handbook. We're sorry, but student government is serious business. Not sure how it was missed originally. Were we to overlook this, only anarchy could follow.

So the current VP became President, and Keith Liddick knew honest bewilderment for his remaining time at Lamar, and was never sure who really believed him and who was just nodding until he would shut up. He sobbed freely when Auburn wrote that with deep regret they could not offer admission. Weep not for young master Liddick: his father, a friend of the Gochmans, set

him up with an Academy Sports location. He married well and spawned several young upper-middle-class Liddicks, and was politely but firmly trained by his wife to stop telling that stupid Class President story.

If the vacancy at VP had any ramifications, no one noticed them.

Something had pretty clearly tipped off the administration. Either Liddick noticed the change, confided in the wrong person, and that person grassed, or it was surfaced by an audit. Too much time had passed for it to have been a response to routine logging. The proximity to midterms pointed at auditing—yeah, report cards go home at midterms, ergo stable grades must be in by then (and are likely recorded), ergo backups are likely taken, ergo perfect time to crosscheck against previous backups looking for discrepancies. Well, shit. He'd already collected a list of current seniors sorted by grade point average, calculated the 10% line, and identified five targets of opportunity. He'd carefully broached the topic, and found them more than receptive. Looking back, he probably could have asked for more than five K.

No one seemed surprised at Bolaño's claims; their main concern had been getting caught. He emphasized that not getting caught was a matter of not talking. "If worst comes to worst, act surprised and deny all knowledge. There are no records incriminating you, and I'll refund you. You heard about Keith Liddick last week, right? He's sitting happy today, sweating over Life Skills, furrowing his brow at $2x = 6$, wishing he was dribbling. All you have to do is earn grades this semester sufficient to hold on to the small numeric advantage I'm providing."

One had asked, "what about the person I'm displacing?"

"Well they won't be in the top 10% anymore."

"Do I get to pick who that is?"

"Are you serious?"

"You won't let me pick?"

"Pick whom among that 10% holds the lowest GPA?" Idiot.

"Oh, I guess you're right."

"Christ. Now, there is a small potential problem: if that person gets all As this semester, they might wonder how it's possible that their class rank went down. If they raised enough of a stink, maybe people look into things. But if these people were accustomed to all As, they wouldn't be at the border for the top 10%, *n'est-ce pas?*"

"Jeez, I hope not."

"You'll of course be refunded in this unlikely event. Look, I'm your fairy fucking godmother. You fucked up, but not too badly, and I'm giving you the opportunity to undo that fuckup for five thousand dollars. Your first year out of A&M you'll make more than that over changing tires and checking oil, and that's what you're looking at otherwise. You're driving a Navigator out there. That's a forty thousand dollar SUV. You can get five grand from your parents, and it'll be the best investment you ever make."

He was \$15K richer than he had been the previous week. Another \$10K was promised in the post. He had less than half a semester to neutralize whatever had highlighted his test run. He poked around the InteGrade UI, but saw nothing about backups or audits—there didn't even seem to be a way within

the software, at least at a regular teacher's access, to configure notifications about changes. It all pointed at something working externally.

He approached the detestable Keith Liddick. "Hey, *presidente*, I heard some shit went down. You been changing grades? You clever fuck."

"What's up Bolaño? No, I didn't have anything to do with it. I don't know what happened. I didn't even know anything *had* happened until they called me in there and started accusing me."

"Any idea how they found out?"

"You mean how it happened? No idea."

"No, I mean how did they know that it had happened at all?"

"Oh, they said that they check the grades against backups whenever report cards come out, and if an old grade has changed, they ask the teacher to confirm that they did it. They were like, we didn't need to ask in your case. Twelve grades, Keith? Wasn't that a bit greedy? And I'm just like, what the Sam Houston are you talking about? Hey, you know computers, right? What do you think could have happened?"

Outstanding.

"I think you did it. Twelve classes? You can't blame that on cosmic rays." He put an arm around Keith's shoulders. "Don't let it get you down. If you get sad, remember that student government is retarded, and nothing bad actually happened to you. Teach me about computers sometime, big guy."

Campus IT was two dorks in their thirties, caricatures of stereotypes both, without a decent shirt or haircut between them. They knew Bolaño, appreciated his interest in computers, and were now and again useful sources of information or technique. They seemed furthermore convinced that he was fundamentally up to no good. He had little hope that he could ask truly relevant questions without setting off their alarms.

"Mr. Morris, I've been wondering about my backups situation at home. As in, I don't have any. What would you recommend?"

"I like Fastback Plus. It's what I use at home for both of my computers. Here we use Norton Backup, which is good enough, I suppose. Mr. Newell seems to think it's better."

"Well, we can get a support contract for it, so yes, I think it's better in that regard. I'm sure Fastback Plus is fine for you, Michael. They're both better than what comes in DOS."

"Is my Netware directory here at school backed up?"

"Yes, we back up all the student and teacher directories every Friday."

"Do you just back them up to another hard drive or what?"

"No. The server is running eight SCSI hard drives in a RAID. That's a—"

"I know what a RAID is. This is RAID5?"

"RAID0."

"Isn't that dangerous?"

"That's why we have the backups! It's very fast. RAID5 would be too slow, and it's hard to get hardware RAID5 for that many drives. But that's already a very expensive computer, and there's no room for more disks. It has an Exabyte

Mammoth Data8 tape connected. For you, I'd try and get one of those Iomega ZIP drives. The tape drive is over a thousand dollars."

"How big are the SCSI drives?"

"Two gigabytes."

"So you can put sixteen gigs on a single tape?"

"Not quite, actually. The tapes are fourteen gigabytes. We don't back up the programs—DOS, or Netware, or the shared applications. The user data is limited to twelve gigabytes, and it fits on there."

"Do you overwrite the tape each week?"

"No, we have four tapes. One we only update after midterms and finals, and that goes offsite almost immediately—"

"Almost?"

Morris looked at Newell. "We run some consistency checks against it, make sure the backup ran successfully, you know. The other three we rotate through each week, with the oldest one going offsite."

"Why do you take it offsite? Oh, I guess the building could burn down."

"Exactly."

"Where's offsite?"

Newell cut in. "That's not for you to know, Michael."

"Oh of course, no problem at all. You told me what I needed. Thanks a lot, Mr. Morris, Mr. Newell. Could I maybe get a copy of that FastBack Plus?"

Morris frowned. "It's not shareware, Michael. It's very reasonably priced for what it does." But Michael Luis Bolaño was already in motion.

* * * * *

So they all but confirmed that an audit is run against the previous long-held backup whenever grades are recorded. That's gotta be either something InteGrade provides, or they're dumping the InteGrade data store to plaintext and diffing them. Very sensible. There are three places to attack this: the backup media, the audit process, or the audit environment.

The source tape used is held offsite. Don't know where offsite is. Doesn't matter—I'm not breaking into anybody's house.

The audit process is some application. Maybe they built it themselves, in which case they might recompile it at any point. A vendor application can get upgraded...but they're probably not upgrading core functionality mid-semester. Either way, if they're competent, they probably put a sentinel bad value into the backup to ensure it's flagged. Otherwise, they wouldn't know the audit is functional. Maybe I can capture and replay.

A local BBS provided Netware 3.11 and several multimegabyte PDFs containing the Certified Novell Administrator training materials. The final weeks of his junior year were spent doing little else but reading them, experimenting on his local install, writing code, and iterating. He asked Larry at ¼-Price Books if he could go down to five hours a week through the end of the school year.

"What, do you think this operation is going to fall apart without your handsome presence?"

"So that's alright with you?"

"Michael, you're just here to bring in the chicks."

“You know I’m gay, right?”

“Well start bringing in the gays, then. Shitfire.”

* * * * *

On the fourth Tuesday of March, the 26th, Luis Bolaño in the master bathroom wrote to his second son:

Michael Luis. My miracle. My monster. You will do amazing things. Try to do them in the service of good. Be audacious and bold. Honor God. Care for your mother. Love her also. Forgive me. Adios.

Luis picked up a gold-plated Colt Double Eagle, mugged for a moment in the mirror, and raised it to his mouth. He carefully pointed directly back and above the horizontal, the better to obliterate the brainstem. He pulled the trigger, striking the Boxer primer of a Winchester Defender SE .45 ACP jacketed hollow point. The bullet fired true, but whether this was due to the ballyhooed nickel exterior of the Super Elite we unfortunately cannot know. Luis demonstrated in his final act a competence and even aptitude largely absent from his life. Mess was minimal; there was only minor damage to the house. Conscious thought ceased less than a millisecond after the projectile first began to rend apart the muscles of his palatal velum. Were his neurons still networking, he might have been proud that tissue trauma actually beat chemical signals along the glossopharyngeal nerve: he triggered his gag reflex, but never felt it.

* * * * *

Rosemary called Lamar High. Michael arrived home and a patrolman presented him the envelope. “It was on the sink next to your father. It has your name on it. I’m sorry.” Michael took it wordlessly, hugged his mother, and went to his room. He paused for a moment, ripped the unopened missive along its height, then both pieces across their widths, and flung into the trash the last, unread words of Luis Bolaño. He began eagerly to work.

They pawned the meretricious pistol that day. Michael assured her he didn’t want any of the other guns, and Luis’s whole ostentatious armory was sold before the week ended. She never asked about the envelope. For a few weeks he thought about it once or twice a day. The end of the semester drew nigh and he thought of it no more.

Suddenly he could no longer log into his teacher account. He went down the list of collected credentials, trying each faculty username. All seven refused login. For a few moments, Bolaño felt things slipping out of his control. He ensured that *he* could still log in. No problems there. He edited his script to pull one last list of passwords from the machine on which it was run, and then remove all traces of the trojan. Cleaning the machines was even faster than compromising them. Looking at the newly acquired credentials, he realized that every privileged account had a different password on his current list. Oh, so they made everyone with grade access change their password after Liddick. Smart. Not good enough.

If he was going to disable or even discover the defensive audit, he needed access to the account that ran and built it. Newell had claimed no program-

ming experience when asked—he was strictly a networking and hardware guy. Morris said he wrote some C when the school needed it. Assume Morris. He compromised a downstairs lab machine, and waited for Morris to come around without the more suspicious Newell. He unplugged the Ethernet from the computer in question.

“Hey Mr. Morris? I can log in fine on most machines, but this one seems to time out after I enter my password.”

“Huh. Let me come look at it. Let’s see if I can log in. Nope, is this the same behavior you were seeing?”

“Just the same.”

“Hrmmm. Let’s check the network cable. Ahhh yes, here’s our problem.” Morris smiled, satisfied, and pointed at Bolaño with the cable’s 8P8C connector. “Always check your cables, young Mr. Bolaño.” He reattached it, and verified a successful login. “There you go. It ought work now.”

“Ahhh, you are truly wise, Mr. Morris.”

Morris flipped a victory V and returned to the many irritations of high school network administrators. Bolaño sat down, copied the password corresponding to `morrisb`, and disinfected the box. Holding his breath, he tested the password right there.

It didn’t work. Maybe I mistyped it? Fuck.

Indeed he had.

As soon as possible, he posted up on his preferred library machine, logging in as Morris. There, in his network file storage, was the directory `CHECKER`. Within were several `.CPP` and `.H` files, including one `GRADECHK.CPP`. Michael could have danced a jig. He printed all the contents—about twenty pages of a language he’d never used—and skipped home to learn C++.

There was an easy problem and a hard problem. First, he needed to modify the code, eliding verification for his customers while interfering with no other checks. He would need to rebuild the binary and stage it on the server. The hard problem was that Morris could at any time make a change to his source, rebuild, and push his own binary, blowing Michael’s away. He could set up a job that watched for this, and copied his compromised binary back, but then Morris’s changes wouldn’t be reflected. However amusing it might be to watch Morris figure this out, he would presumably at some point get to the bottom of it, at which point all hell would break loose.

He could of course make his edits in Morris’s own source tree, but then they would be immediately visible. *L’appel du vide*. Suicide, not even resilient against Morris restoring his source tree from some pristine location.

He remembered Ken Thompson’s 1983 Turing Award lecture, “On Trusting Trust.” Put it in the tools. He felt a surge of power as he read the Borland manuals, focusing on the linker `TLINK.EXE`. He gathered that the C++ compiler `TCC.EXE` generated code around external function calls, which were encoded with the target function name. The linker found these functions by symbol table lookup, filling in the appropriate jump target. If two modules implemented the same name, the collision could be resolved via linker parameters.

L’appel du vide: call of the void

The function performing the lowest-level consistency check was simplicity itself. `CmpGradeRecords` accepted two Grades and compared them for equality. One came from the first data set, one from the second. Above that was `CmpStudentSemester`, which matched up classes and invoked `CmpGradeRecords` on the appropriate pairs. If the classes couldn't be matched, or a grade had changed, it returned `true`. Michael carefully typed out a wrapper that checked the incoming student ID for his set of five. If those matched, it returned `false`, bypassing any actual work. Otherwise, it passed its arguments along to the original function. He got things working around four in the morning.

He copied his esoteric invocation of the linker, and pasted it into a new batch file `TLINK.BAT`, calling `2TLINK.EXE`. He copied this file and his compiled shim object to a floppy and went to sleep, exhausted but exhilarated. At Lamar, he renamed `TLINK.EXE` to `2TLINK.EXE`, and copied his payload to the network share. If everything worked as expected, building any source with the Turbo C++ tools would interpose his object code over any function named `CmpStudentSemester`. To test it, he built a fresh copy of Morris's tool from the pristine source.

He dumped the symbols. The size of `CmpStudentSemester` had increased by a factor of almost five. No other symbols seemed changed. Sweet.

He never heard complaints from the departed seniors. Fifteen thousand he handed over to Rosemary, suggesting she bring up to date various arrear balances, and build back up her savings. She wondered at the thick pile of currency, but did not question where he'd acquired such a sum. He'd planned to claim stock market wins if asked. The remaining ten he placed into a Vanguard brokerage account. It would find good use in time.

He accepted his diploma, smiling at his mother in the audience. His valedictorian speech was an excerpt from *The Myth of Sisyphus*. At its end, he came clean: "Those fine words were not my own. The name of the man who wrote them was David Koresh."

An angry murmur from the audience.

"Just kidding! It was Albert Camus, winner of the 1957 Nobel Prize in Literature. The text from which they were taken was one of the two or three most sublime works of this century. Not being a Nobel Prize winner myself, I figured I'd best use this opportunity to share him with you. Read a book, Houston." He sat down to minimal applause, and finally stood once more, setting forth to restore the house Bolaño. Graceful Rosemary, brave José López, learned Antonio, fiery Gustavo, even dogfucking Cortés—whatever else, the man had skills—stand me now and forever in good stead. I, twentieth generation of Montezuma II, am putting my queer shoulder to the wheel.

A little less than a year after Michael walked across a temporary stage at the distressingly ramshackle Astrodome, Eric Harris and Dylan Klebold donned trench coats, loaded up a shotgun and 9mm each (Eric a Hi-Point 995, Dylan the poorly regarded Intratec TEC-DC9 Mini), and snatched thirteen lives in the parking lots, cafeteria, and library of Columbine High School. Their elaborate plans were poorly executed: the two twenty-pound Blue Rhino propane tanks central to success were purchased only that morning (Harris's homemade "Natural

Selection" tshirt is visible on Texaco closed-camera footage at 09:12), leaving little time for deliberate preparation of their detonating apparatus. Dylan's TEC, true to form, jammed after firing just two shots; he would end up with only 67 rounds expended to Eric's robust 121. Their pipe bombs proved pipe dreams: the one conflagration they initiated was extinguished by automated overhead sprinklers. A few weeks later, tornadoes would kill more than twice as many Oklahomans. Six days earlier, seventy-three Kosovar Albanians, sixteen of them *fëmijë*, were regrettably mistaken for Yugoslav infantry and engaged between Đakovica and Dečani with laser-guided and dumb munitions, much to their detriment. So it goes.

But for a few weeks Columbine simmered, a regular topic of American conversation. Many looked back soberly or otherwise and knew that they'd at times dreamed of nothing so much as pulling on their own coats, running up the black flag, and sticking it to some gladhanding high school sons of bitches. And still others wondered who had walked among them with the spirit of a Klebold or a Harris, and when alumna and alumni met it was a subject of speculation, and several mooted that our own Michael Luis would not shock were he to take up the wrathful visage of Sammā'ēl. At Stanford, two Lamar graduates drank Anchor Steam in the all-frosh housing of Florence Moore ("FloMo") Hall, and one offered an observation along those lines. The other, once something of an associate of Michael's, snorted derisively. It was an uninspired take: Bolaño was imperturbable, and aloof, but generally without complaint. He seemed solidly in control of his life. No, slaughter was not at all his style.

"Besides...if Michael Luis Bolaño had made his mind up to wipe out our high school, neither you nor I would be here wearing cardinal. We would have been blown to shit or shot to shit or whatever he intended, along with everyone else in that building. Good God, it would have been a saturnalia of blood. Westheimer Road would resemble the surface of the moon. And he'd be alive somewhere, bet. No way does he go down. And it wouldn't have been that he hated everyone there. It probably would have resulted from, like, a wager."

"Hah."

"And you know what else? There would be some sick fucking joke in there, something really dark and twisted, something that makes you laugh because it's so goddamn horrible."

"Like what, Steve?"

"Shit I don't know. I'm not Michael. OK here we go. He would have somehow the previous day arranged it so all the guidance counselors came down with food poisoning. So none of them are there, just two-thousand stiffening Houstonians and these eight guidance counselors bent over toilets at home. There'd be a note to all the media saying something like, 'I have spared your guidance counselors, several of whom can read. May they help you as much as they helped me. Don't mistake my kindness for weakness. —MLB'"

"Ahhhhahaha that's fucked up. Bolaño never did take shit from anyone."

"I guess if you're gonna grow up gay and out in Texas you'd better be the coldest motherfucker in Houston."



4 elephant seals

In Georgia's Marietta a steel chicken rises fifty-six feet above Cobb Parkway and Roswell Road. So long as power flows to this cyclopean gallus, her great beak opens and closes with ineluctable regularity. In times of plenty, she clucks enticing invitations, offering Kentucky Fried solace to a hungry world. During unhappier days she crashes maxilla and mandible together in warning: woe to he who rises up against Cobb County and all its strength. Her eyes—it is not possible to see both simultaneously—wamble in unnatural lunatic curves. Epicycloids, maybe, or perhaps epitrochoids? Watching either for more than a few moments can be unsettling, even unpleasant. Its common name—a sensible if decidedly unimaginative aptronym—is the Big Chicken.

Eight kilometers away from the Spiced Colossus, in 1996 the superb George Walton Comprehensive took down its Raider trade dress, raising high in replacement the banners of Turner Classic High School's Airpirates.

Cue those glorious Centennial Olympics, awarded unexpectedly to Atlanta. Cue memories thus evoked of Muhammad Ali, the Magnificent Seven, and Coca-Cola. Time Warner that year acquired Turner Broadcasting for \$7.5G, and Ted Turner, *TIME's* Person of the Year 1991, sat pretty. Meanwhile in Cobb County, passionate and eager suburban parents together with innovative and energetic staff led Walton's application for charter school status. The Turner-Agassi Education Facilities Fund looked close to home and saw a deserving cause. Money changed hands, complete with Publishers Clearinghouse-style non-negotiable gimmick checks. Centennial Olympic Stadium, rechristened as eponymous Turner Field, accepted the Atlanta-Fulton County Braves *en huddled masse* from their dilapidated Capitol Avenue home. The Turner wave seemed like it might never crest. Charter status was granted, a thankful school took a new cognominal from its benefactor, and the future waxed bright.

Georgia has 159 counties, at least 140 more than it possibly needs, second in number only to Texas's frankly preposterous 254. In the middle of Georgia's largely agricultural inner coastal plain a few more than nine thousand people carve their stakes from Turner County, home of the Titans. These normally reticent dirt farmers brought forth formal written protest to the Georgia High School Association: "Turner High School would infringe on the brand and identity we have for years struggled to establish. Must we small, humble communities, salt of Georgia's red clay, play yet again the role of estrous sow, presenting for careless ravage swollen and carmine cunthocks always towards the patronizing, Godless, yuppie scum of Atlanta's northern suburbs? Is it not enough that they have everything?" It came to Ted's attention, and he whooped, "Those Turner High School boll weevils want THS, huh?" He removed his hat and cackled wildly. "Well we'll be Turner Classic! The real TCHS!" It seemed slightly off, but the Fund was being historically generous.

They called Ted Turner the Mouth of the South. Looking out over his sloe gin fizz upon construction of a new library, he mused aloud. "Corsairs and buccaneers are all a bit passé. Square. Suggestive of the age of sail. Ottomans once tried to board *Courageous II* eighteen nautical miles out of Montevideo.

Scared hell out of Kofi Annan. He still wore a bolga hat back then. Wasn't Under-Secretary yet." He looked conspiratorially around the room. VIPs grinned back uneasily, wondering whether a point might at some time emerge.

"Well Jane yells *tiến lên!* and ninja-kicks the Saracen sons of bitches right into the water. Now that sea's just aswarm with the vicious candiru, the dread South American vampire fish. They'll swim right up your dick, chew it up from the inside, spit your dick out before you can say Billy Graham. Those Mohammedans are splashing and I holler down, 'that's what we call a baptism by Jane!' It'll be on her next videocassette. But these kids aren't gonna know a *lettre de marque* from their peckers. Now hijackers, hijackers can still scare people. You were primed to tuck into some American bison, boom! You're on a DC-8 bound for Havana. In the cockpit Will Kunstler's snoring under an issue of *Ramparts* with his dick in his hand. Then you're sitting on a landing strip with nothing but a box of rum and two infielders to be named later. Ruined our trip to Yerba Buena." None but Ted seemed enthused about the change, but the Raiders were dutifully reimagined as Airpirates, their mascot's unflinching depredator exchanging sabre and steed for balaclava, rappelling gear, and a faux Kalashnikov painted orange in conformance with local regulation.

So Sherman Spartacus Katz became a Turner Classic Airpirate, even as his days as an Archangel of St. Anthony's came to ignominious and abbreviated end. He tried a few unpromising afternoons of Airpirate football, finding the camaraderie and company and prospects of victory markedly inferior to those at St. Anthony, with its hundred-year history of Irish Catholic scrappiness and big private donors. He recalled that the then-Raiders had obliterated his Archangels at Brookwood's quizbowl tournament the previous year, the only tournament in which StAHS's moribund academic bowl team played. He inquired, and was told to show up at room B-137 after school that Wednesday.

He found assembled at 1515h a raucous collection of nerds: marching band geeks. Conspicuously and complexly flawed flag girls. Second generation Asian-Americans spoke loudly, watched by children of Asian immigrants, who spoke little if at all. Freshmen rehashed their tryouts for Atlanta Youth Symphony Orchestra. A ring of sophomore boys communicated exclusively in Simpsons quotes and piercing, insane laughter. One simply enormous senior Katz knew from AP Calculus flipped through manga in isolation, somehow sweating both above and below a tentlike Eve 6 shirt. A gorgeous redhead sat crosslegged on a desk reading Flannery O'Connor, reason enough herself to attend whatever this was. An Indian—there had been no Indians at St. Anthony's, Katz reflected—collected dues with a superabundance of seriousness, rendering meticulous Xs on an accounting pad. Christ, some of these kids look young. Older students, some wearing letter jackets—I do hope those letters were not for academic bowl ough—conferred with a short woman of seeming Italian heritage. Median attractiveness on a denary integer scale here looked to be about a...call it a straight four among the gentlemen, a generous six for the ladies. Many of the older half he thought he recognized from a class or two: by one's junior year, Advanced Placement and the like have segregated high school, the intelligentsia

tiến lên: "go forward" Vietnamese battle cry

striding from one AP to another in bright-eyed, bushy-tailed flocks. Two blonde girls of indeterminate age studied the floor with intensity that suggested untreated autism, pacing deformed lemniscatic orbits like bees' waggles or the chaotic trajectories of Lorenz systems. Katz kept an ear open, hearkening for the crescendo of agitated whimpering that might herald a spectacular collision.

He waited until there was some space around the Italian woman, presumably faculty, and approached. "Hello there! My name's Sherman Spartacus Katz. I'm a junior. I just transferred from St. Anthony's downtown—you know it, I'm sure?"

She seemed distracted. "Yes, of course, private school. Good team back in 1991. They took one from us at Vanderbilt that year." She looked out over the room. "Squads break! Written drill on Norse mythology, forty-five open questions, written drill on Western philosophy, thirty open questions, then quick draw. Fifth tournament of the year is next weekend at Woodward. All seats are in play. A and B teams stay with me." Her voice was crisp and powerful. The fiftyish people present split into four groups that correlated not quite precisely with age. Three left the room.

Katz continued, hopeful. "Yep, that's us. I was captain of our team last year, and probably would have been this year, but now I'm here. I guess it's your lucky day!" He spread his arms, grinning stupidly, making of himself a gift. Perhaps she wasn't aware of the academic rigor he'd left behind.

She looked him up and down, eyes dubious, smiling thinly. "I only think we saw St. Anthony's once last year, at Brookwood? I recall a thrashing from our D team."

His smile faded. "That was your D team? They were pretty good. So y'all go to more than one tournament a year it seems?"

"Our A and B teams go to a tournament pretty much every weekend."

"Oh wow. Anyway, I'm here; I don't expect to be made captain but I figure, you know, I can probably slide right in on your varsity as it were."

Her laughter was not unkind. "Our varsity has been coming to practices twice a week, most of them for four years. I've never seen you play, Sherman Spartacus Katz. Sherman Spartacus Katz?" She shook her head. "Why did you leave in the middle of the semester?"

He was ready for this: "We abandoned the Catholic Church."

"Hmmm." Behind them, nine students had taken desks, pens out. A tenth passed out mimeographed worksheets, then primed an alarm clock and took her own chair, barking "go!" Then the sound of ten pens on paper.

"You don't happen to have the periodic table memorized, do you?" One shortish boy looked up at the ceiling and clenched his fists at his temples, radiating genuine anguish. His face broke into a smile; his scrawling resumed.

"All of it?"

She smiled wider. "Yes, all of it."

"I can't say that I do."

"Where are you strongest?"

"I mean, I'd consider myself strong across the board."

"Not on the periodic table, it seems."

He cocked an eye. "No, I suppose not."

"Who won the fiction Pulitzer in 1953?"

"Ummm, can you tell me the book?"

Her laughter this time had a definite edge to it. "You said you're a junior, right? I'd have you start with the D team, but they're mostly younger. I guess you can try a practice or two with group C. They're headed down the hall that way." She pointed to the left.

The alarm clock rang and the leading girl, rather unnecessarily it seemed, called out "Time! Pencils *down!*" Several of the sitting players looked at Katz with discernible, unfriendly confusion. Papers were swapped. Fists Boy told no one in particular, "easy drill, easy warmup, let's go." Katz wished him ill.

Surprised and not a little humiliated, he left the room and caught up with his assigned gaggle, happily counting the Flannery reader among them. He came alongside her. "Greetings and salutations! I'm Sherman Spartacus Katz. Just transferred here. This is a pretty serious academic bowl team! What's your name?"

"Ariadne. Are all your introductions trinomial?" She removed a black scrunchie and when she shook her hair it moved like auburn sand drifts.

"I dig the trochee-dactylity of it."

"Wouldn't that only be five syllables? Where'd you move from?"

"I didn't move, just left St. Anthony's downtown."

"Why'd you leave? Did you fight someone? You're pretty big."

Straighten the back. Spread the shoulders. "We stopped being Catholic."

"You stopped being Catholic so hard you had to leave in the middle of the semester?" The group turned and entered a biology classroom, where a set of buzzers had already been strung across two front tables.

"Yeah, my mom's kinda crazy about the Pope now. She gets drunk and rants about papists. She's sweet, though."

An Indian in front of them turned. "Yo that's some Klan shit, is your mom a racist?"

"Eh, more an ignorant but imaginative lush with Manichaeian tendencies."

Ariadne looked at him with curiosity, and momentarily he swooned.

"Dude I recognize you. My name's Arun. I was on Turner Classic D last year and we smoked your asses at Brookwood. You were on that team." He paused for a moment, evaluating Sherman. Katz figured their weight delta to be thirty kilos minimum. The kid had heart. "*Smoked* your asses."

"Yeah." Katz chuckled uneasily. "I'm getting the impression our team wasn't very competitive. This seems much more organized." Everyone was taking a seat. Katz angled towards Ariadne, looking pointedly in another direction as he did so.

"Yeah it's definitely an operation here. Did you see the middle schoolers? You can take fifth seat with that team. They're missing someone today." Arun pointed at the far table, and Katz walked mournfully to its end.

"Middle schoolers? I did see some goddamn children, yes."

"Yeah they get shuttled over to practice here on Wednesdays, so they're ready for camp before ninth grade."

"Camp? Like, academic bowl camp?"

A tonsorial abomination wearing a shirt covered with equations broke in. “Camp was the best!” Nods of acclamation around both tables. *Camp?*

The Arun person stood and began distributing worksheets. “First drills today are Norse mythology. Top scores earn a Flight of the Valkyries to Valhalla.” No one laughed. “Seo-jun, got the timer ready?” A Korean to Katz’s right nodded. “Start!” Katz leaned in to work; he guessed them to be the same drills people were crushing in B-137.

He read the page twice, not believing it the first time through. “What’s the significance of the boldface?”

In unsynchronized chorus, with giggles: “A and B don’t get those clues.”

Norse Mythology (1 of 2) Levels C–E

0. Sometimes called Ásbrú
Shimmering path destroyed in Ragnarok
1. Son of Nanna and Baldr
God of justice
2. Whitest of the gods, emerald-toothed
Son of Odin and nine mothers
3. Fed his hand to Fenrir
Theophoric of Tuesday
4. “Lord of frenzy”
Wields Gungnir
5. Rules her subjects in Niflheim
Daughter of Loki
6. Flytes with Frigg
Father of Jörmungandr
7. Weeps for Baldr in Fensalir
Theophoric of Friday
8. Gylfaginning, Skáldskaparmál, Hávttatal
Snorri Sturluson
9. Sæmundar Edda
Codex Regius

Name: _____ Score: _____

Targets: 10 (A), 9 (B), 7 (C, D), 6 (E)

Interesting. “Do answers repeat?”
From Arun: “You’re allowed to. The sheet won’t.”

Oh my. He looked around: everyone but him was writing. A girl sitting opposite, fourteen years old tops, had at least four down already.

I guess this is how stupid people feel all the time. Huh.

Friday—that comes from Freya, right? He marked down FREYA for #7. Tuesday, could that be Thor? Thor is Thursday, idiot. Maybe he's both days? No one's two days you dumb piece of shit. "Rules *her* subjects." Well, that's another girl, put HEL. Is Frigg a woman? Isn't Frigg married to Odin? Christ this is hard. Fuck it. Are #8 and #9 the PROSE EDDA and POETIC EDDA? Shimmering path? Rainbow bridge? Bifröst? BIFRÖST, bitches, woot. "Emerald-toothed," the fuck? Gungnir is ODIN I think? "Flytes with Frigg" is that a typo? Fights? Flies? How much time is left? Argh. Ugh. He filled in remaining blank spaces with LOKI. A dismal performance.

"Swap." Katz felt numb yet also bruised. He accepted the paper of Seo-jun, and realized he hadn't written his name. He moved to do so, but the hateful child hooted "you're supposed to put your name down, Sherman! Otherwise you can't get points!" He spoke with affectations normally reserved for pets. "I'll put it down for you this time," He printed SHERMAN K., his laugh shrill. "You sure wrote LOKI a lot!" Laughter became general. Ariadne, for a few minutes the queen of all his dreams, giggled without even the courtesy of covering her mouth. Sherman died ten thousand deaths. He glanced at Seo-jun, pondering briefly what faces he would make were he being dragged under a bus.

"We've got BIFRÖST. FORSETI. HEIMDALL." Katz wondered whether Arun possessed some kind of delegated power in this room, or was simply assertive. "TÝR." Well, at least I didn't write Thor. Oh, fuck, I wrote LOKI. Not much better. "ODIN. Also accept WÖDEN, WUODAN, WUOTAN, anything like that."

A kid with the look of a real dipshit: "Do we accept WÊDA?"

Arun is surprised. "Did someone answer WÊDA?"

WÊDA? Katz is certain he's never heard of WÊDA. Did Arun say Wu-Tang?

"No, but someone could have answered WÊDA."

Everyone looks annoyed, heartening Katz slightly.

Arun pauses before answering. "In my room, WÊDA gets you points, but it seems unwise to rely on that. Who answers WÊDA?"

Dipshit doesn't want to stop. "I thought about answering WÊDA."

"But you didn't."

"No, because I wanted to make sure I got points."

"Do you ever not want points?"

"Well someone else could have answered it."

"Moving on. HEL." Hot damn! That's three! "LOKI." And there's four! Katz turns to his right, looms over the questionably pubescent Seo-jun, pumps his fists, and erupts: "MAH BOI, LOKI." Plainly shocked faces at all seats. Seo-jun audibly whimpers. Katz feels better. "FRIGG." Fuck, I thought I had that with Freya. "Finally PROSE EDDA and POETIC EDDA. Goal here was seven." Katz with his six feels lucky indeed. Ace of spades, baybee. Papers are passed to Arun. "We've got a seven, six, four, two—jeez, Richard, might want to study the Norse—seven, new guy with a six, six, nine—nice work Wen!—and four. And me with an eight. But I don't count. Everyone below a six to the back." The

unfortunate Richard and two other kids leave their buzzers, assuming dejected poses at other tables. One older boy mutters, "fucking Norse."

Oh, shit, I'm still in it! In it to win it, you eunuch jelly thou! Bring it on.

Seo-jun doesn't turn quite all the way this time. "You have to score high enough on the drill to play the open questions."

"I put that together, Seo-jun. Thanks."

Ariadne overhears, and smiles, repairing all the broken pieces of his heart.

Seventy minutes later, he thought he'd made a pretty solid impression. He'd read Bertrand Russell's *History of Western Philosophy* that summer, and pulled out nine on the second drill (A. J. Ayer? who?). He stayed to help Arun clean.

"So are you captain of this C team, Arun?"

Arun looked pained. "I'm on B. Sometimes A. We cycle through the JV rooms as referees and mentors."

"JV? But I'm a junior." Katz frowned.

A shrug. "You're playing C, so you're JV."

Katz, despairing, called for a life preserver. "Well I had a pretty good first day, right? I think I got the most tossups in the room."

"You also got the most wrong."

Ice cold.

"I got a nine on that second sheet."

Arun's arms went up. "Sherman Katz, I do not make teams. But if you were the best player in this room, still, you were the best player in C. Coach Čermák has over two hundred of these sheets. There's a dude Kumarash on A who had them all memorized a few weeks into freshman year. If he got a nine, all those present would turn to one another asking with wonder, 'what the fuck just happened?' He's working on a new set of sheets. The Glengarry sheets. You do not get to play them, because that would be throwing them away. Anyone on A would smoke you, man." The admiration in Arun's voice rang clear.

"Čermák? Is that Italian?"

"Coach is Czech."

"Czech." Silence. "All right well I'm gonna head out."

"Good meeting you Katz, see you tomorrow."

"Arun, you normally play B, you said, right? Do you hope to move up to A?"

"I will finish my career at B, I had lots of fun, went to many places, and learned so much. Turner Classic Airpirates B is basically A without the pressure. I'm happy there." He paused, wistful. "It's nice to be on the same side as the people who are kicking everyone's asses all the time."

Sherman walked out into the hallway. Ariadne was long gone.

"Hey Sherman Katz, wait up one second."

"Yeah?"

"You never went to camp? Never had serious practice?"

"Arun my man I didn't know academic bowl camp existed. You're actually my first Indian-American."

The senior, proud but realistic, softened a bit. "You did really well for someone who never did this seriously. If it's something you want to do, you

could probably be pretty leet. But you'd have to commit to it now, and work hard. There are people, man, where this is their life. I'm just saying this because you looked kinda, you know, sad."

"Aww Arun draw it in, give me a hug."

"Ahh, no, please, thank you."

He sprung *allegro* down the empty hall.

Arun, I shoot craps with the Universe, and win.

* * * * *

Returning the following afternoon, Čermák called him over.

"Sherman Spartacus Katz. Arun says you played well yesterday."

"I also got the most wrong."

"He said that you had some surprisingly deep conversions. He was very impressed when you picked up Aldous Huxley off *Brief Candles*." She looked up. "I've never heard of *Brief Candles*. You picked up all five computational maths. No one on my A team got more than three." Her knowledge was staggering. She raised her voice. "We never get computational math because everyone wants to be lawyers and writers and they don't bother learning to count. And we lose games because of it. I'm talking to you, Stephanie. I'm talking about Irmo and the finals at University of Florida." Dropping it again, she asked, "do you want to be a lawyer, Sherman—I'm going to call you SSK."

"Most of what I learn I study with passion because I consider it necessary to the practice of computer science, to which I wish to dedicate myself."

"Oh." She seemed pleased. "That's refreshing. Arun also said, and his logs verify, that you buzzed in on and missed a great many questions we'd call basic canon." Katz waited, tense. "Your foundations are trash. I can coach you. Are you serious about this? I pulled your test scores."

"Wechsler AIS?"

If she was impressed, she didn't demonstrate it. "Stanford-Binet and PSAT. If you put in the raw effort, you could learn the canon in no time. Arun says you're very aggressive, that your speed was of the highest level."

He had no idea what to say.

"I like that in a player."

"Was that a *Top Gun* reference?"

"They watch a lot of *Top Gun*." Serious now. "Will you memorize the periodic table? All of it?"

"Give me a week."

"Excellent." Booming again. "Because none of these future Superlawyers of America think they're going to get sued over element 66."

From behind Katz: "Erbium!"

"Take a lap, Stephanie!"

Katz ventures, "Dysprosium?"

Čermák's face brightens. "Hard to get at! Yessssss!" She claps twice. "SSK, for real, why did you leave in the middle of the semester?"

"All part of God's good plan."

"Do you know what SSK stands for?"

"You mean besides my initials."

"Sociology of scientific knowledge. Should a tossup ever use the term 'epistemological chicken,' that's SSK. 'David Bloor' is 'strong SSK.'"

"What is that? Epistemological Chicken? Excuse me?"

"The game of chicken but with epistemology. If you want to know, you can read *The Structure of Evil* by Ernest Becker. He won the nonfiction Pulitzer in 1974 for *The Denial of Death*. You should learn the nonfiction Pulitzers for Nationals. Have you found out who won Fiction in 1953?"

"I...have not."

Loud: "Fiction Pulitzer in 1953?"

At least eighty percent roar back, "HEMINGWAY, *The Old Man and the Sea*."

Some Jessie Spano wannabe adds, "also cited in his 1954 Nobel-Lit."

"Oh I've actually read that! Didn't know it won the 1953 Pulitzer, though."

"No one plays on my A team without knowing their Pulitzers, SSK." She hands him a run-off. "Go buy these books. Bring me a receipt and I'll reimburse you. We have donations."

"Ummm this looks like a few hundred dollars of books. How do I buy them in the first place?"

"Can you maybe use a card of your parents?"

"Sure, unless I hate getting my ass kicked seven ways to a Sunday."

She shuddered.

"I'll have Stephanie pick up a set for you, and I'll reimburse her. OK?"

"I mean, that's awesome. Thank you. Unless she needs distinguish lanthanides to do it. I'm sorry, that was really mean."

Čermák was chortling. "No, she's been claiming to have the f-blocks memorized since tenth grade. Learn my f-blocks, SSK. Losing on periodic table questions is like getting screwed by all the universe."

He thinks *like*, 5% of a Λ CDM universe at most, but now is not the time.

* * * * *

He recorded one hundred and forty-eight WAVs. With his speakers turned up all the way, he could hear his computer in the shower. A program to sort them randomly, ask one detail ("1943?" "Now in November?"), give him five seconds to answer ("Upton Sinclair, *Dragon's Teeth*." "Josephine Winslow Johnson, 1935."), and then reveal the truth was fewer than ten lines of code.

"Willa Cather."

"1923. *One of Ours*."

"*To Kill a Mockingbird*."

"1961. Harper Lee."

"William Faulkner."

"Either *A Fable*, 1955, or *The Reivers*, 1963. Nobel 1950. Woot!"

His new shower curtain featured the periodic table through 103. The next year, IUPAC would officially name 103 lawrencium, but the issue was not settled in 1996. When Katz heard the news about 103, he cursed; his shower curtain had rutherfordium for 103. He later learned that this suggested the curtain

was manufactured in a Soviet client state, and marveled: I have a curtain with iron from behind the iron curtain.

Speaking of iron—on autopilot now—atomic number 26. Group 8. Period 4. d-block. Solid at STP. Amphoteric. 11 oxidation states: +2—iron II, ferrous—and +3—iron III, ferric. Body- and face-centered cubics. Ferromagnetic, obviously. Fe from Latin *ferrum*. Four stable isotopes dominated by 56. Common endpoint of nucleosynthesis. Component of hemoglobin and myoglobin.

In the back of classroom A-211 at Turner Classic HS, Sherman read *The Brothers Karamazov* as translated by Mrs. Constance Garnett and stuffed into an oversized purple Bantam massmarket. His AP English teacher brought a student to the front to start each class; they were to read aloud an original composition on any theme, not to exceed five minutes. Alphabetical order ruled the day. Preceding Katz was one Tara Jakorski, female lead in all the school's dramatic productions at least since he'd arrived. Doubleplusinsufferable, insufferable to the max. In October 1997, she overcame tears and a genuine wail—a heart-rendering thing heard in three other classrooms, something you'd expect to be accompanied with sackcloth—to deliver a confused and rather unscientific paean to that Carl Sagan chestnut, “we are made of star stuff.” Katz wasn't sure why he was so offended by the performance, but he doubted Tara knew what nucleosynthesis was, and was pretty sure her mention of the Butterfly Effect was straight out of *Jurassic Park*. The simple truth was that he was an angry young man. Elements had weighed recently upon his mind; the next day, he presented a rejoining *capriccio*:

Our stelliferous ancestors? Rude coruscant belches of supernovae from another spiral arm. Nebulae shrugging off expanding gossamers, pappuses gently borne on the dissipating breath of stellar winds. From this awesome cosmochemical lineage originate too dimethylmercury, thalidomide, and maggots. Rot and rabies and black molds in the lungs are star stuff; every purulent discharge and perineal cyst can trace its parentage to the heavens. Carbon fused aswirl as gamma rays rendered asunder neon, yielding the prime chalcogen. That same oxygen braved megakilometers of open space before finally becoming a crucial part of painful colorectal polyps. Would you deny ass cancer its stake in God's plan?

Cyanwasserstoff. Blausäure. Hydrogen cyanide. Primo Levi stars in *A Bad Year at Auschwitz-Birkenau*. Call it what you will. Triply-bonded carbons and nitrogens made a rich feast from European Jewry's mitochondrial iron, maintaining acquaintance with old friends. Star stuff's calcium invests a human body with form; stuff from that same star erupts as osteosarcoma, packing the body bloated and bursting with leukemic mucilage. A tumor's corybantic growth

capriccio: short and lively piece of music

Cyanwasserstoff: hydrogen cyanide *Blausäure*: prussic acid

feeds off star stuff siphoned up through the vessels of angiogenesis; like the Sorcerer's Apprentice they summon home siblings from strange aeons. Everyone you know will experience fratricide on the part of some celestial brother.

Star stuff: ash from the Creator's smoldering bong.

"Sherman." His teacher was pissed; he figured she was going to give him hell about shitting all over Jakorski. "No drug references, c'mon."

"Oh. Sorry! Cheerfully withdrawn. Thalidomide is ok though, right?"

"Yes?" She seems confused by the question.

Among the baryonic matter with which you and I are familiar, the vast majority was fused or at least astrated in stars. The exceptions huddle on either side of the curve of binding energy, and indeed on the line scored by time's arrow: primordial hydrogen, both with a neutron and without. Alpha particles with sundress-clad leptons at the Helium Ball. Some trace lithium; a pinch of beryllium. Behind them swarm only quarks and gluons and inflatons and mysteries. Far along out on the other side, assembled much more recently, are the heavy actinides, pear-shaped and lethargic from gorging on beta decay.

Get together enough of the latter, squeeze it tight, admit some bare neutrons, and you can destroy a city. The first annihilating emissions, screaming out from Hell and hohlraum, are in the form of x-rays, a terrible pressureweight of light. Murmur *lux fiat*, as your Father did before you. Direct them at some of the former. Lithium-6 plus a neutron breeds tritium *in situ*, a third isotope of hydrogen, one unloved by the gods. It will exist for only a split of a second. Compressed and heated, vernal tritium seeks out deuterium almost as old as the universe itself. Get together enough of this, and you can destroy a world.

Star stuff. Why rent when you can own?

* * * * *

Most state high school associations put on an annual "official" quiz bowl tournament; many high schools and colleges fund their programs by running their own. These run a gamut from small, strictly local affairs attracting a handful of schools to massive productions with several hundred teams split across a dozen divisions or more, sourcing small armies of volunteer readers from parents and alumni and drawing multiple caterers. There are furthermore televised competitions in the major media markets, many running the length of the academic year: *Battle of the Brains* in Virginia (WTVR following a long run on WCVE), *Masterminds* on TW3 in upstate New York, perennial *It's Academic* on D.C.'s WETA-TV and Baltimore's WJZ (running since 1961 and 1971 respectively), two unrelated *High-Qs* (Atlanta's WSB and El Paso's KCOS). In Michigan, *QuizBusters* on WKAR competes with the upstart *Quiz Central* of WCMU. There's

School Duel in Miami, and *Academic League* on San Diego's SDCoE iTV. Oklahoma City's KSBI features the strangely named *Mind Games*. Most offer decent prizes in the form of scholarships to winners—it's a safe assumption that these kids will be matriculating. But like college football in the twentieth century, there is no true, universally-acknowledged "national champion" of academic bowl: any organization can call their tournament a National Championship; Mike Tyson could host one right now. It's the attending teams that make the NC, not the other way around. Winning any tournament of significance typically means an invite come February. Nationals take place over the penultimate or last weekend of the school year, and are the last time graduating seniors will play as a team, or in many cases see one another.

TCHS had taken a championship in 1996 (as the Walton Raiders), and would again in 2001. Other perennial heavyweights in that period included Pennsylvania's State College HS. Edison out of California, Thomas Jefferson School for Science and Technology and Maggie Walker Governor's School from Virginia, Horace Greeley representing Chappaqua, New York. Booker T. Washington, the pride of Tulsa. Paul Laurence Dunbar had recently taken a leap forward, and put in work for Lexington, Kentucky. Punching well above its weight was South Carolina, whose Dorman, Irmo, and Charleston Harbor juggernauts resulted in several all-SC fin de siècle championship rounds.

The PACE National Scholastic Championships (instituted 1998) and NAQT High School National Championship Tournament (likewise 1999) have today largely superseded the National Academic Championship. This last is surely the longest-running natty, having been put on since 1978 by Chattanooga's Questions Unlimited and its colorful president, Chip Beall. QU is regarded as outmoded by the cognoscenti, complete with dubious facial expressions and glasses pushed to the end of noses. *Anno Domini* 1997, it was the only game in town, and the nation's elite teams descended upon an agreeably, uncharacteristically cool and dry capital region. These participants included Houston's Lamar HS Redskins (renamed the Texans in 2014), and the Airpirates of Marietta's Turner Classic (changed back to the Raiders 2001-09-12). The Airpirates' shirts were emblazoned with their logo and iron motto:

TURNER CLASSIC HIGH SCHOOL



the skies belong to us

PACE: Partnership for Academic Competition Excellence

NAQT: National Academic Quiz Tournaments

Entering the dorms, Katz saw a cluster of kids parked around a television in the common room. Puff Daddy, truly inescapable that year, bounced around the screen, making a mockery of everything good in the world, and certainly everything good in hip-hop. Blinders of rage descended over Katz, sworn foe of Puff Daddies everywhere. Notorious B.I.G. had a few months prior been brought down under mysterious circumstances. "Hypnotize," one of the great tracks of the 90s, was pushed out of number one by Hanson's "MMMBop." Led by Puff Daddy's duets—as ubiquitous as they were annoying—with Ma\$e (an uninspired ripoff of Grandmaster Flash's "Message") and Faith Evans (a treacly, maudlin misery built atop The Police's already dreadful "Every Breath You Take"), the bullpen of dogshit at Bad Boy Records enjoyed an *annus mirabilis*. Puff Daddy's otiose bars saturated radio; on MTV, as Suge Knight said at the 1995 Source Awards, "the executive producer was dancin' in the videos." Summer's end saw the rise of yet another Puff + Ma\$e crapfest, the frankly embarrassing "Mo' Money Mo' Problems," a black mark on Christopher Wallace's escutcheon.

This trash track would be nominated for a Grammy in 1998, just in time for Puff Daddy to devolve Led Zeppelin's "Kashmir" into "Come With Me" on the *Godzilla* soundtrack. At the Radio City Music Hall, Will Smith's "Men In Black" defeated "Hypnotize," and Puff Daddy's *No Way Out* beat out both Biggie's *Life After Death* and the Wu-Tang Clan's *Wu-Tang Forever*. The Wu had that year recorded "Triumph," five minutes and thirty-eight seconds of incontestable greatness that have stood the test of time. The Ol' Dirty Bastard was thus more than generous when he interrupted Shawn Colvin's speech for Best Song, seized the mic like an *espontáneo* in a *ruedo* and announced, "I figured that Wu-Tang was gonna win. I don't know how you all see it, but when it comes to the children, Wu-Tang is for the children. We teach the children. You know what I mean? Puffy is good, but Wu-Tang is the best!" ♡

The Airpirates had several times that season met the Charleston Harbor Butlers of South Carolina, coached by bitter Čermák foe and known ultrabitch Amélie Blankenship. Their first seat was a black-haired Mormon, jagged and vascular, who slapped at the buzzer with tremendous force. Next to him, their blonde Viking of a captain was at least six-six, and enjoyed a commanding knowledge of fine arts. The lithe West African girl in seat three was a full foot and a half shorter; she had been observed in prior tournaments whipping from her purse a laminated periodic table for review between games. All three were juniors. Together they were easily the best team in America, combining to cover wide swaths of material with astonishing speed, and were 4-0 that season against Turner Classic, winning twice in championship rounds. The games hadn't been particularly close. It was a point of belabored pain for Čermák. She seethed visibly when shaking the French woman's hand, and drove the team home in angry silences when they lost.

At the table's end sat their fourth, a creature of pure malevolence. He was taller than the third seat, but on this young team he was clearly by some years the youngest. The rumor was that he was only twelve, and in the seventh grade. Čermák felt sure that it was the eighth, but Katz suspected she just couldn't

espontáneo: an outsider who leaps into a bullfight *ruedo*: bullring

bear the thought of another lustrum playing against this thing, this automaton, this golem. He sat with eyes closed, mouth hanging open in a rictus. Before each game, Charleston Harbor's Amélie walked him up to the table with her hands on his shoulders, guiding him, her gait timed to his uncertain, probing shuffle. She would pull out or straighten his chair as necessary, so his girlish hands could reach the buzzer. Then the game would begin. He couldn't see, but he could hear just fine, and from that beaming maw emerged a steady stream of academic bowl whoop-ass.

The story was that he had evidenced early on a complex and parentally challenging set of spergisms. The child stared out into an unfocused space, and refused to eat anything but brothy soups. He shrieked hysterically when approached with a shoelace or zipper. Left in a Palmetto State front yard unattended at the age of eight, he sat atop a rock and watched the sun cross the sky for the better part of two hours, intent, purposeful, never letting it slip from his necrotizing eyes' rapidly decaying sight. Free radicals streaming from phototoxified chromophores attacked the choroidal blood vessels; these burst apart, yet he continued still to move his head, tracking perhaps by smell the eigengrau sun. From ruined pigmented epithelium spilled subretinal melanosomes, quickly engulfed by macrophages. An ophthalmologist said it looked like someone had been at the back of the boy's eyes with a dental drill, then threw up. Tim Grover would never see again.

Confirmed details regarding Amélie Blankenship's discovery and successful recruiting of young Tim are scant. Čermák mused darkly that she'd issued a standing request at Crab Road Middle years ago, to put any blind kids through to her directly, "but only if they once had sight. I can do nothing with a child who never had vision to mourn." If we accept her somewhat paranoid tale: Blankenship with quivering orgasmic flush and great expectation set to recording tape. One ninety-minute Memorex DBX after another, filled with every tossup in the vaults of CHHS Academic Bowl. She then recorded facts so arcane and minor they'd never been deemed fit for high school play. Forty-five hours. Sixty hours. Mnemonics. Key words. Possible alternatives that made buzzing an uncertain thing. The likelihood that other, sighted children would know a fact. It was a comprehensive and well-rounded auricular education. She clutched the tapes under an arm and drove to the middle school, where he was called out of class.

"Tim, can you hear me?"

"Yes."

"Do you like sports, Tim?"

"I wasn't very good at them. Now I can't even see."

"That's right, Tim. You're blind as Helen Keller, and you're never going to get better." Tim whimpered. "Have they told you otherwise, Tim? That if you do their exercises, and you're lucky, you might one day see again?"

Tim nodded his head. Snot leaked thickly from his left nostril. Amélie dabbed it away with a cotton round. "My name is *Mlle* Amélie Blankenship. You may call me Coach Blankenship. I train the Butler academic bowl team at Charleston Harbor. Do you know what academic bowl is?"

"I think so, like *Jeopardy!* but with a team."

"That's right. I'm told you're very smart, Tim. You seem well-spoken. Do you like *Jeopardy!*?" He held out his hands, and she realized he wanted another makeup remover. She gave him two, into which he pathetically honked his nose. He placed them on the table, and she shifted her chair away a few inches. "Yes I like it. Especially reruns. I'm not very good at it the first time, but once I've heard the questions, I always remember them."

Comme c'est beau! "Tim, most little blind boys become beggars. They bang their bowls against the ground cadging change from strangers. Sometimes they're beaten, or worse. Most of them cut their legs or arms off so they can beg better. Can you imagine that? Having to roll around on a skateboard, singing 'I have no legs, I have no legs,' all the time dirty, dodging urine-filled beer bottles hurled at you by hateful men? Eventually you'll be killed and thrown on a heap with dead dogs. But you can do better than that. Maybe even have a girlfriend. Wouldn't that be wonderful? A girlfriend for a blind boy like you? It must be horrible, knowing you'll never know another human's love."

Tim fell apart, a blubbing blind mess. Amélie hugged him to her tightly.

"Until then, I'll be your only friend. But if you want to impress girls, you've got to have a hook, some skill. They love confidence, and right now you're not feeling any confidence at all, are you? Poor thing, I bet you've thought it would be best to snuff it, to just ask someone to turn you in the direction of some tall cliff. But I can make of you a champion. I can make you the best in the world at the world's greatest game."

Tim blinked, from habit, and whispered, "hunting human beings?"

Amélie laughed. "You've got the right idea, Tim. But you're blind. Blind people can't effectively hunt their fellow men. You'd be filleted by the first paraplegic with a gardening trowel. No, I mean academic bowl."

"Oh."

"I brought you a present." She lifts the tapes up onto the table. From the noises of her grunt and the tapes' impact, Tim can tell it's at least got some heft to it. "This is how you become a champion. These are forty tapes and a Sony Walkman. Listen to these tapes. Whenever you have free time—and we both know you've got plenty of free time—play another tape. Play them until they're worn out, and you see the words on the backs of your eyelids. Then I'll bring you more tapes. You'll come play on my varsity. Every weekend, you'll get to travel to a new place, up in the front of the van. And you'll win, Tim, and you'll hear the cheering from your supporters. And Tim, trust me, that is absolutely the best deal anyone's going to offer you for the rest of your life."

He looked uncertain, but reached for the Walkman.

"Oh, and Tim?"

"Yes...Coach Blankenship?"

"The short story about hunting men is 'The Most Dangerous Game' by Richard Connell. First published in *Collier's*, 1924. Also sometimes called 'The Hounds of Zaroff.' Memorize that." She turned and departed.

As she drove back, humming “Dreams” by the Cranberries, she figured Tim might by the end of summer be able to tell her the month and day of publication, along with the year. She pumped her fist, and yodeled.

So now he rode in the front seat of the Charleston Harbor van, listening to endless tapes on his everpresent Walkman, walking with their coach while the rest of the team ran ahead en route to crushing Čermák’s hopes. Each time he got on stage with his sweatpants and Velcro shoes, Čermák perceived a future: CHHS beating her teams by more and more points; a boot stamping on her face, forever. In a dream she beheld goosestepping young children, tens of thousands of them, speaking in booming synchronization, reciting dazzlingly advanced material, eyelids flapping open and shut atop empty sockets. When one fell even slightly out of serried lockstep, it led inevitably to crash and tangle, and the groping of tiny arms, the air replete with mewls and moans.

A trophy for all tournaments present and future was ripped bloody from her womb, and awarded to Charleston Harbor, competing now as the Tiresian Tyrants, fielding a team of four infants each named Homer. At a fabulous reception, Stevie Wonder played as Ray Charles and Andrea Bocelli performed a medley rich with luscious harmonies. The audience chanted f-block elements and wore cheap headphones. Coach Amélie, resplendent in her opera gloves and tiara, wore over her evening gown a purple sash that read BOSS BITCH. She simmered. She curtsied. She blew kisses to the adoring crowd. She flounced and turned, deploying a peacock tail. The scarred eyes with which it was rife blinked in unison, and the back of the sash declared GOULASH SUCKS. Then she looked at Čermák and hissed *welcome to the place prepared for you from everlasting to everlasting. Now truly you will never die*. The sleeping mind of Venda Čermák screamed and screamed and screamed.

By Friday, the last day of preliminaries, Turner Classic was 3-1 over four games and guaranteed a playoff berth. The Airpirates had no more matches, so Katz and two others went to watch the Butlers play their 1000h game, hoping to find someone dead or mute. It was not to be; CHHS handily dispatched a quality Booker T. Washington team, sending them back to Oklahoma 440-225. They left the room immediately, casting sideeye at Katz and his teammates. Feeling lazy, Katz stayed to watch the subsequent game, Lamar vs. Bromfield of Massachusetts. The worldlines of juniors Katz and Bolaño thus first crossed in Arlington, Virginia on Friday, June 13th 1997, shortly after 1100h in room 70 of Marymount University’s Rowley Hall.

Neither Bromfield nor Lamar were particularly inspiring. The Cambridge school put up 330 to Lamar’s 215. Both sums were pedestrian; Turner Classic hadn’t scored less than 375 in their four games. The Lamar first seat got two questions that made Katz take notice, however:

Tossup 13. Written in Vancouver, the word “cyberspace”—Lamar 1?

Lamar 1: *Neuromancer*.

That’s correct.

Tossup 20. It supports hard drives, but also scanners, printers, and many other I/O devices. What is this successor—Lamar 1?

Lamar 1: SCSI.

Can you provide more information?

Lamar 1: Small Computer System Interface.

That's correct.

Katz had never heard a computer question in a tournament, let alone one about William Gibson's cyberpunk classic. That Lamar guy had picked them up both pretty quick, about where Katz would have had them. He waited for the match to spool out, and followed the Lamar team out the building.

"Hey! Uhhh, Lamar 1! Lamar guy! Tall thin guy from Lamar!"

He succeeded in stopping and turning around their team.

"Hey ummm I hoped to ask you something." He pointed at Lamar 1.

"Ask away."

"Well I mean ummm I really like William Gibson and it sounded like you do, too and I thought we could talk for a minute." He winced, feeling autistic.

Michael made a face, then shrugged. "I think he means to fuck me," he told his team. They laughed. "Best go on. I'll meet you back at the dorms."

"Ahhh cool actually ummm I'm not trying to fuck you at all, totally straight, I think—I've never really given the question much thought honestly. No offense if you're gay, of course."

"Good, I am."

Katz pauses for a moment. "Is that a joke?" Swing and a miss!

"It is not." Michael's face grows harder. "What do you want?"

"OK, I think we started off badly here, sorry. You got both the *Neuromancer* and SCSI questions in there, right?"

"Yes."

"Actually I mean you got most of your team's tossups, heh. How are y'all doing at this tournament?"

"Poorly by any metric other than participation."

"Sorry to hear that. Anyway, I guess I had never heard a computer-related question in academic bowl. It surprised me. And then it surprised me when you got it. What do you do on computers? Do you code? Are you leet?"

Arched brows. "Am I leet? Are you eight?"

"Hah I mean are you in the H/P/C scene, hacking, phreaking—"

"And cracking. I am aware of the acronym."

"Oh sweet! Do you write code?"

"Yeah, I have."

"What languages? Hey look not to offend you or freak you out but do you smoke weed?"

Michael looks around. "Yes. Keep it down."

"Sweet! I brought a delicious sack up here and a bowl and it's all in my dormroom if you want to go smoke some and continue this conversation. I really do promise, not trying to fuck you, not because you're not desirable or anything—you're a very attractive guy, if you don't mind me saying so—just I don't even, you know, know how that works."

Michael thought this guy clearly mad, but hadn't been high since Monday, and was feeling it. Besides, why does one attend such events if not to meet the

weird and brilliant of America? “Sure, I’ll come smoke your weed with you. What’s your name? Where are you from?”

“Sherman Spartacus Katz of Atlanta, Georgia. Turner Classic High School. Rising senior. Fourth seat, but only because I’m loud.”

“Michael Bolaño. Houston. I assume you’re Jewish?”

“Nice to meet you mang, we’re gonna get high as hell. And no, everyone thinks so due the name, but I descend from evangelical North Georgians. My dad incinerates animal carcasses. I used to say ‘Katzes don’t get Holocausts, we do holocausts,’ in the sense of, you know, a burnt offering, but people kept misunderstanding it and I had to stop. The point being you’re not the first to make the mistake. I’m a huge philosemite. I would have loved to have been born a Jew.”

“You’re a strange guy, Sherman.”

“Oh mang, absolutely. You have no idea.”

* * * * *

“Do you have any SCSI gear in your machine?”

“I do not. Two Quantum Fireball one gig drives on IDE.” Both Bolaño and Katz had built their own boxes from parts, Bolaño spending about twice as much total.

“Nice. Our team doesn’t drill on any computer stuff. I guess it’s going to start showing up in tossups? I saw a commercial for AOL on TV the other day; I never thought I’d see online stuff on television.”

“The computer’s spread into everyday life is inevitable. Certainly there will be more computer questions, although I expect that they will for the immediate future continue to be mindless expansions of acronyms.”

“I wouldn’t mind that. A big fat bonus round of computer acronyms would be tight.” Katz paused. “BASIC?”

“Are you asking me what BASIC stands for?”

“Sure.”

Bolaño rolled his eyes. “Beginners All-Purpose Symbolic Instruction Code.” Are we really doing this? Alright. “COBOL.”

“Common Business-Oriented Language. VGA.”

“Video Graphics Array. FORTRAN.”

“Formula Translator. BIOS.”

“Basic Input Output System. ALGOL.”

“Algorithmic language. RPG.”

“Role-playing game? What?”

“Nope!” Sherman pounces. “Report generator. IBM language, old as hell, but still used. RPG IV just got released in 1994.”

“Is that even Turing complete?”

“What does that mean? I only know Turing from Gödel, Escher, Bach.”

Michael laughed. “Here I thought you were all into computer science. A language that’s Turing complete admits a solution for all recursive functions. You surely remember those from G-E-B.”

"So basically anything with the power of a Turing machine. So the brain is presumably Turing complete."

"Some brains."

* * * * *

The dorm room is breezy with both windows open. By Katz in the window sits a clear glass ashtray, bought from a street vendor the evening they arrived, featuring the White House silkscreened in red. He'd emptied it upon entry; twenty-eight minutes later, it contains two butts, and he's got another Newport going. He stands by his bed and clearly wishes there was room to pace. With his lighter Michael knocks a short glass pipe's cinders and dross into an empty can of Surge recovered from the trashcan. Three floors up, they can barely make out a quadrangle through flourishing red maple. They exhale through fragrant polyester held with rubberband onto the end of a toilet paper tube. Katz brought up the dryer sheet, liberated from laundry supplies; the cardboard tube had been extracted from a bathroom upon arrival. It was singularly ineffective at masking the smell of fuming marijuana, but most of their smoke left via the window, and anyway there were during summer semester no sullen RAs to pound on the door.

"How is the weed in Houston?"

"We call what you have mids; they are not usually available. Those with means smoke dank, sensimilla: high-THC product without seeds, often sold under brand slash strain names. Those without resort to bricked schwag, rife with seeds, typically smelling of inorganic fertilizers and pesticides."

"Yeah, I don't have the money for dank. Mids get you just as high, you just have to pull the seeds out."

Michael nods without commitment; *comme ci comme ça*. "This is not bad. As I said, the middle is in Houston excluded. How much do you pay? An ounce runs three hundred for us, but I usually buy two at five."

"A qwop—quarter-pound—costs me four hundred, but figure you're losing about five grams from each ounce in seed mass. So you're paying just a little bit over twice as much, four point four repeating vs eight point nine."

Michael wants to close his eyes to run the calculation, but knows it would be a sign of weakness. It takes him several seconds. "Yeah. Four point four repeating. You did that pretty fast. Is math your thing?"

"I love math, but I'm not good enough at it for it to matter. Gauss is said to have commented regarding Euler's identity, 'if this is not immediately apparent to a student upon encountering it, they will never be a first-rate mathematician.' Do you know Euler's identity?"

" $e^{i\pi} = -1$, right?"

"Yeah, though normally written $e^{i\pi} + 1 = 0$ so you get both the additive and multiplicative identities of \mathbb{Z} ." Katz watches Bolaño's reaction closely to see if he groks. "I don't know about you, but when I was first told that, I thought I was being fucked with. Did you do ARML and/or USAMO?" Michael frowns and shakes his head. "USAMO is the USA's Math Olympiad team, for competition

at the IMO. ARML is just American. If you do well enough on the AHSME and AMC, you take the AIME, which seeds USAMO. I've taken the AIME every year, and never qualified for USAMO. Never come close. Those guys are going to be mathematicians, not me. My thing is computer science, that and literature, but CS as I don't want to be poor all my life. What's your 'thing,' Michael Bolaño?" Katz extinguishes his cigarette and sets to repacking the bowl.

"I'm good on that, by the way. I'm plenty high." Michael takes some time to answer. "I used to think I wanted to go into government. I no longer have any such desire, and am unsure when I lost it." He pauses again. "I enjoy subverting authority and disrupting the banal. I enjoy embarrassing those who substitute bluster for knowledge. I enjoy secrets and masquerade. I am unconcerned with most men's opinions. I wish to live comfortably, with maximum freedom of action. I ought probably major in computer science, but do not wish to major in computer science." Michael's eyes focus anew; his voice turns harder. "My family helped create modern Mexico."

"Oh yeah? Are they a cloud of pollution or the devalued peso? Sounds like you ought be CIA or something."

He lets the crack pass. Is history not a nightmare from which he is trying to awake? "I am too illegal for Langley. Where do you plan to go to school?"

"I'm going to Georgia Tech. It'll be free, I can get in there, I retain much of my existing Atlanta network, and applying to better schools sounds like a massive pain in the ass plus crapshoot. Yourself?"

"I have always assumed Harvard or Princeton, but only recently learned of the importance of letters of recommendation. This complicates things, and not in my favor. I've made a point of pissing off just about everyone from whom I've taken a class. I almost got the woman who ran our school newspaper fired. I've got a perfect SAT and close to a four oh, but I have no idea who I'll get to write recommendations. So I don't know."

"You and me both mang. Turner Classic will be glad to see my backside."

"How does your school come to be known as 'Turner Classic' anyway?"

"All part of God's divine plan. I know GT doesn't require letters of recommendation. I'm confident enough I'll get in there that I'm not applying anywhere else. It's one of the top five tech schools, which is all you need, and you don't have to deal with the extreme top-end of assholes, the trust fund kids with two Stanford professors for parents."

"I'm slowly coming around to the idea that I'll end up at UT."

"A Longhorn? But you want to major in something CS-adjunct? Nah man, you want to go to a tech school, somewhere everybody knows how to add. Otherwise you've got half the student body majoring in bullshit that requires no real effort nor time, and you'll be miserable watching them fuck their way through a leisurely and undemanding four years. No, you want everybody around you to be ass-deep in the shit. Everyone who comes out of there is useful for recommendations and starting companies and specialized knowledge.

IMO: International Mathematics Olympiad

ARML: American Regional Mathematics League

AMC: American Mathematics Competitions

AIME: American Invitational Mathematics Exam

Are you going to do a sociology startup? Has anyone ever done a sociology startup? Spend four or five or six years in Paradise, where everyone got an eight hundred on the SAT Quantitative and a five on the BC Calculus exam. How do you learn a foreign language? You embed yourself among its speakers." Katz hits deeply. "Plus you're gay, so the worst aspect—the fucked-up dating situation—doesn't affect you."

"How does it not affect me? I'll be surrounded by nerds as opposed to the hot men of political science and physical education jocks."

"I hadn't considered that. Fair enough. But fuck UT-Austin and a bunch of Longhorn Texas bullshit. Come to GT. Classes of all guys, a few girls from behind the Eastern bloc, sedulous Asians as far as the eye can see, all raw-dogging differential equations 24/7, Freaknik, David Finkelstein, access to great lab equipment, it's cheap as hell—dude, you could probably get the Presidential Scholarship if you applied, with your grades, and that pays everything plus a stipend, it's phat—and you'd be a big fish. I can kinda read that on you. You like being the smartest guy in the room, right?" Michael doesn't react.

"Well if you go Harvard, you'll be smarter than plenty of assholes, sure. There will also be a gang of USAMO guys in every class just kicking the shit out of you, or more likely not bothering because they don't care about you. Their jaws won't move when they talk. They summered in Monaco. If you don't go work for a fucking hedge fund it'll be like you failed. You'll be paying fifty thousand a year minimum to live in Massachusetts, New York's impacted colon. Here, hit this." Katz thrusts the pipe at Michael, who shrugs and accepts it. "They have Lisa Randall, but GT has Dana Randall, for my money pound-for-pound the superior Randall."

"Lisa Randall is the higher-dimensions braneswoman at Harvard?"

"It sounds more exciting than combinatorics, sure, but if there are such extra dimensions, will they not need tiling? On top of that, without serious hagiography-style rec letters you're not getting into the Ivy League anyway, nor Stanford nor Duke nor MIT—hell, I think MIT wants to do *interviews* with applicants, which fuck all that. So your choices are UCB, Atlanta, or the Michigan-Wisconsin nexus. Of which GT is the cheapest by like a factor of three."

Sherman accepts the pipe back. "Furthermore, I intend to get down there and sling, and make serious money right out of the gate. I have connections from two different high schools, twenty minutes away from campus. I have a number of people I'll already know there who'll be ready clientele. I'm saving cash next year to go down with goodly weight. And most importantly, I'll be in a dorm full of kids who've probably barely smoked weed before, surrounded by more such dorms. I plan to kick a lot of ass, to be something of an academic leader. I turn on a tenth of those kids and have them buying from me all through undergraduate, and I'll be living well."

"Perhaps. I ought return to my team. I wish to read. I'm in the middle of *The Magic Mountain*, and also the notebooks of Michael Faraday. Thank you, Sherman Katz, for letting me get my head straight."

"Ol' Hans Castorp and Madame Chauchat?" Michael nods. "I dug it. Read it last year. What Dostoevsky have you read?"

"Dostoyevsky is sublime. *Brat'ya Karamazovy* of course. *Zapiski iz podpól'ya*. *Prestupléniye i nakazániye*. Not yet *Idiôt* nor *Bésy*. Soon."

Katz's shock was delicious. "You speak Russian?"

Bolaño's smile was wide and predatory. "Without the language of the *rodina*, Sherman, can you really say you've read Dostoyevsky? You've just read somebody's muddled translation."

"That's pretty fucking cool. Are your parents Russian?"

"My mother is a Mexican-American. My father isn't."

"Your father isn't what? Mexican-American?"

"My father isn't. Let me get your phone number."

* * * * *

Katz didn't bring up *The Gambler*, *Poor Folk*, *The Eternal Husband*, nor *The Adolescent*. He'd personally taken a ten-point tossup just the previous day by buzzing in on *Poor Folk*, though to be fair, he'd never read it, nor any of Dostoyevsky's works of lesser significance besides *The Double*. Speaking Russian is cool, but it doesn't get you points. Which perhaps, Katz ruminated, said something about the didactic value of academic bowl.

Whatever. He figured he was putting together as thorough and catholic an education as any high schooler in America, far beyond the curricula where it mattered. He wasn't playing academic bowl as a substitute for learning. He was playing academic bowl to kick ass, to be the best, to put trademarks around the eyes of otherwise dismissive and mocking fucks from California and Washington and New York, to remind them of and to reinforce André 3000's defiant declaration: *but it's like this: the South's got something to say*.

* * * * *

Katz acquired for \$50 a fake Georgia drivers license featuring his picture and the name Hezekiah Rhombus Cray. He enjoyed telling anyone who asked that his parents were hippie math professors with PhDs in quadrilaterals.

Michael Luis Bolaño contacted him in September of their senior year. Only one teacher had indicated a willingness to write the euphemistic "strong letter," and on further consideration, Bolaño didn't trust her. He'd applied to UT-Austin, UC-Berkeley, and Georgia Tech. They'd both gained internet access in the interim, and exchanged email addresses.

Katz received his expected admission to Georgia Tech and finished out his senior year. His grades were, to be brief, ass. Nonetheless he maintained the 3.0+ necessary for Georgia's HOPE Scholarship. Michael did indeed secure a full ride with stipend at GT. It was neither academically nor financially compelling vis-à-vis the Longhorns—both offers were excellent—but he chose Atlanta. He could list any number of reasons, none of them particularly convincing, but it is most likely that he simply wanted a friend. AP exams were crushed; both

Brat'ya Karamazovy: Братья Карамазовы (*The Brothers Karamazov*, 1880)

Zapiski iz podpól'ya: Записки из подполья (*Notes from [the] Underground*, 1864)

Prestupléniye i nakazániye: Преступление и наказание (*Crime and Punishment*, 1866)

Idiôt: Идиот (*The Idiot*, 1869) **Bésy:** Бесы (*The Possessed or Devils*, 1872)

rodina: родина motherland

Katz and Bolaño would be entering as juniors, the former doubling in Computer Science and Mathematics, the latter springing for Industrial Engineering and Physics. The Turner Classic Airpirates finished third at the 1998 NACs in New Orleans, where Katz got spectacularly drunk and boorishly puked on a player from Ocala's Vanguard HS.

He quit the bookstore where he'd worked two years, and spent that summer writing Visual BASIC to administer psychometric tests—MMPI-2, NEO PI-R, 16PF, BFI, any standardized personality inventory that could be sold to HR departments, recruiters, or executive search committees. At \$23 an hour he was significantly cheaper than most adult developers, but making almost four times his retail job's pay. He knocked the simplistic work out and delighted his superiors. By the end of the summer, he'd saved about eight thousand dollars. With it he paid for a year of dorm fees and meal plan, and the 3COM 3c950b-TX NIC he would need to access the campus network.

In addition, he purchased a twenty-liter lockable safe, a digital scale claiming 0.1g precision up to 500g total weight, sandwich bags, small glassine bags, a pound of schwag, a pound of mids, two sheets of Black Pyramid gelatin acid, two sheets (offered at the last minute) of nameless green gelcaps, four ounces of mushrooms, 600 generic methylphenidate in an imposing violet bottle with Devanāgarī lettering, and 180 20mg Adderall. It wouldn't hold water against *Fear and Loathing's* collection, but it was a start. Fuck that devil ether. He'd done cocaine a few times that summer, but it was too expensive to easily sell, and he didn't trust himself not to Hoover it up.

He swung his baby blue Crown Vic onto I-75 southbound from the Delk Road exit, and looked briefly back before accelerating towards Atlanta.

"This place could never contain me."

Twenty-five minutes to North Avenue. Katz played Goodie Mob, hung to the right, and observed the speed limit judiciously.

MMPI-2: Minnesota Multiphasic Personality Inventory

NEO PI-R: Revised Neuroticism, Extraversion, Openness Personality Inventory

16PF: Sixteen Personality Factor

BFI: Big Five Inventory



the author

nick black a/k/a **dank** holds numerous degrees from Georgia Tech, and has worked at Nvidia, Google, and Intel, besides founding several companies. He lives in Atlanta, where he is employed by Microsoft as a principal engineer on their Orbital space group. He is a Debian Developer.

midnight's simulacra is his first novel as an adult. He has also written an esoteric and specialized textbook, which is not likely to be of interest to you: *Hacking the Planet with Notcurses: A Guide to TUIs and Character Graphics*. By all means, though, feel encouraged to buy it.

He can be found at <https://nick-black.com>.



the illustrator

Justin Barker is an illustrator living in Portland, Oregon with his wife and monster (*canis familiaris*). He holds undergraduate degrees in chemistry and graphic design from Doane University and Peru State College. He holds an MFA in studio art from the University of Georgia. When not working on illustration projects, he maintains a multimedia sculpture practice.

He can be found at <https://justinbarkerart.com>.