

# EXPIRATION DATE

By David Erik Nelson



## Chapter 4

**B**ram had been familiar with the Kübler-Ross Model—that time-worn human progression through tragedy—since Intro to Human Psychology his freshman year: Denial, Anger, Bargaining, Depression, Acceptance.

He'd understood that this was a process that moved forward on no fixed schedule, one that everyone took at their own pace. He'd always assumed that folks progressed through it just once, in an orderly fashion, arriving at Acceptance like a steadfast C student ultimately earning his diploma.

But as anyone intimately acquainted with grief knows, that's rarely the case.

Some days Lizzie was in Acceptance, and cruised forward, Lizzie being Lizzie: Running her miles, hitting the lab, mentoring her mentees, eating kale. Other days, she woke up in Denial, was Bargaining by breakfast, was at Acceptance by afternoon coffee, and then again in Denial by the time they sat down to watch Netflix that night. Some days it was just Depression, from 4am until sunset, when Bram might coax her up to the roof to watch the sun sink below the skyline. There she would wordlessly weep and smile into the world-consuming bonfire as the crows swooped and cawed, like bits of black felt caught in the furious updraft.

Bram tried different things on those Depression Days—get her up, get her running, queue up Just Dance on the Wii, stream old rom-coms and Simpsons episodes, get Chet over. He ultimately settled on something that was by no means APA-approved, but at least soothed a Depression so profound and all-consuming that Lizzie experienced it not even as an emotion, but as actual physical pain, a roaring dark ache that swallowed and flattened her to the floor like a lead x-ray blanket. He'd keep the blinds low, so that the bedroom glowed mellow as a fish tank, build her a nest of pillows and blankets from all over the apartment, bring her the big spaghetti pot filled with ice cubes and cans of cheap-ass beer, and basically leave her alone. He'd call in to work, then spend the day puttering around the house, checking on her hourly to towel the condensation off her beer bucket, fish out the empties,

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and tell her anecdotes from when he was a kid in the suburbs of Detroit. He got into a lot of dumbass hijinks back then—searing off his eyebrows with hare-brained home-brew fireworks, getting stuck in windows while trying to sneak out past curfew, getting skunked while walking home drunk from a party he wasn't even supposed to go to, etc., etc., ad astra, ad nauseum. She showed no response to these anecdotes on her Dim Days, but he knew that she always loved a story that reflected his basic, cosmic ridiculousness.

For his own part, Bram was shocked at the equanimity with which he accepted his fate. In a first for him, he proved an absolute protege at Kübler-Rossing, progressing through the five stages of grief and dropping into Acceptance with the natural grace of a pro baller weaving through a junior varsity pack-line defense and sinking a layup.

Except for a single hiccup:

On their seventh day living together, Bram awoke at 6am, alone in their narrow bed, in the grips of a panic attack that was itself twisted in the barbed wire of an intense and absolute paranoia. It had suddenly dawned on him that he didn't actually know any of these people: He trusted Granny Gin because Chet and Lizzie did; he trusted Chet because Lizzie said he was her brother—even though they looked nothing alike, apart from being black. Hell, she looked almost nothing like anyone in her “family”—except for Granny Gin, who he only knew because Chet and Lizzie had brought him to her. And he only knew Lizzie because she just happened to wander into his place of employment three days after chatting him up at that faculty event—because, you know, beautiful, brilliant, upwardly mobile young women regularly give their digits to schlubby coffee-jockeys in chinos. This abruptly struck him as supremely unlikely.

Bram leapt out of bed, his heart hammering. The entire “web of trust” was self-referencing, and none of it had been in his hands at any point.

A set-up.

A bizarrely ornate, unthinkable expensive set-up, with no discernible motivation—he had no access, no influence, not even much money: he was a slightly glorified barista with a useless and pricey degree, and a savings account that barely broke three digits. But still, regardless of why anyone might bother, there was certainly a how. It could be done. It wouldn't even be that hard.

Bram found himself pacing the room, naked, trying to figure out if he actually knew anything solid and verifiable about any of the people his life

now revolved around.

He froze and slowly pivoted. Was he being watched? He didn't see any cameras or tell-tale recording lights, but God only knew how tiny those things were now. There could be a camera in the overhead light, in the TV, in Lizzie's kitten-shaped clock-radio. Bram faked a yawn and stretch, pretended to scratch himself, tried to look muzzy-headed and just-awoken as he wandered the room, plucking up his clothes, finding his phone, casually scrutinizing the wall sockets and light fixtures and Lizzie's black off-brand iPhone charger, which his phone had spent the night plugged into. Was that a pinhole camera lens just above the USB socket? Was it possible that the thing had a tiny computer in it and had cloned his phone when he plugged in? He powered the phone down and, as nonchalantly as possible, walked to the kitchen and wrapped it in aluminum foil.

Bram left the apartment, closing the broad, old hardwood door firmly behind him and making sure it latched. Then he sprinted down the hall, taking the steps two at a time.

He needed to google some stuff, and he certainly couldn't use his phone—which had possibly been compromised by Lizzie's charger—or any computer he knew that They (whoever They might include now) knew he might use.

So he went to the closest public library branch, jogging the whole way, taking the crisp early-autumn air in quick, shallow breaths that he knew were making him light-headed, but which he seemed powerless to control.

Approaching the library's glass double doors, Bram remembered that you couldn't use a computer without first swiping your library card, and if he did that then They—this vast and ever-growing cabal of beautiful scientists, stern grannies, chubby comic book guys, aunties, cousins, librarians, infiltrating all levels of American society—would know where he was and what he was up to. They would know that he knew, and right now his only advantage was that only he knew that he suspected anything at all.

Bram instead loitered at the magazine racks flanking the pod of public computer terminals, paging back and forth through a three-month old copy of *Modern Dirt Bike*, waiting for his break. Finally a stooped, ancient lady in a pink beret stood up from the computer, pushed in her chair, and walked away without logging off.

Bram slipped into her seat, which was still unnervingly warm. Granny Gin (if that was her name!) had identified herself as “Dr. Ginevieve Chester” on the phone,

so he typed that into the web browser's search bar. The first hit was the Emeritus faculty webpage for MIT's Atomic, Biophysics, Condensed Matter, & Plasma Physics research unit, where Dr. Ginevieve Chester evidently still specialized in "Biophysics" and "Quantum Information Science"—fields that both sounded vaguely made-up to Bram. But if that was the case, at least they were made up by a team of MIT admins, academics, and marketers, and not by a tall, slim schemestress and her portly "brother."

Bram's heart—which had been galloping fit to burst since he'd bolted awake—finally slowed to a lively trot.

Although Dr. Ginevieve Chester's Emeritus faculty listing included no office, phone number, or email address—in contrast to the other two Emeriti shown there—it did include a photo. It was an old picture—the woman shown was severe and handsome in a black turtleneck and short cascade of glossy curls, her skin smooth apart from a matched set of crow's feet and frown lines—but it was quite obviously the Granny Gin he'd met, and the family resemblance to both Lizzie and Chet was clear.

Bram was finally breathing normally; at the very least, he was now confident that Granny Gin—and subsequently Chet and Lizzie—were who they claimed, or near enough.

Digging back further into Granny Gin's career proved tricky; she had apparently been a professor at Carnegie Mellon in the 1990s, like Lizzie had said, with a dual appointment in the Biological Sciences Department and Department of Statistics. Anything earlier than her tenure at Carnegie Mellon was lost in the foggy prehistory of the Internet.

But what was really interesting wasn't what came before she joined Carnegie Mellon, but what happened after she joined MIT's tenured faculty sometime in the late 1990s or early 2000s—because she left, or was asked to leave, by 2004. Bram had done his time among the Ivory Towers of Academe; no one just walked out on tenure, not after only four years, and you'd have an easier time unseating a Supreme Court justice than ousting even the most desperately incompetent tenured professor.

That Granny Gin's exit from Academe followed years of school-paper op-eds, conspiracy blog posts, and occasional Conservative AM radio diatribes wasn't shocking—what was shocking was the remarkable fluidity of this brouhaha: At one point in early 2002 both right-wing militia bloggers and liberal college paper op-ed writers were calling Granny Gin a terrorist while Rush Limbaugh was defending her

as “a true patriot and vital weapon against Islamofascism.” Within a year Limbaugh thought she was a traitor, aspiring liberal journalists adopted her as a cause celebre in academic freedom, and the militia guys had noticed that she was black and better paid than them. There were two threads dedicated to her on the white supremacist Stormfront message boards. One was just the sort of racist garbage and nauseating photoshops one would expect from that crowd. The other thread was a fairly even-tempered political debate of the sort of “total information awareness” Granny Gin’s “alleged findings” might precipitate, and if the risks outweighed the gains. Discussion of her race and its significance were explicitly banned there; members interested in such material were gently directed to the photoshop thread.

And on and on the merry-go-round spun until 2004, when Dr. Ginevieve Chester finally disappeared not just from MIT’s active faculty directory, but from the public mind altogether—apart from the occasional arch suggestion that it was either very suspicious, or very convenient, that Dr. Ginevieve Chester had totally disappeared from the public mind.

Then, in 2008, without fanfare, she popped back up, both on the MIT Faculty Emeritus web page, and as an oft-quoted source for pedestrian articles in *Nature*, *Popular Science*, and the like. By then Dr. Ginevieve Chester was old news.

Bram logged out of the library computer, then walked out through the glass double doors. The day was bright, the air crisp and clear, the sky blue and untroubled. He dug out his phone, peeled off the tinfoil he’d wrapped it in, and called Granny Gin. Her number was still among his “Recent Calls Received.”

She picked up on the third ring, but Bram didn’t wait for her greeting:

“What were you doing between 2004 and 2008?” he demanded, feeling more than a little like a prick. Demanding wasn’t really his thing, but he knew from past experience that one needed to begin a Granny Gin conversation with one’s hands firmly on the steering wheel. “What happened at MIT?”

It was then that he realized that she was already talking, mechanically explaining that she was not currently available, but would call back at her earliest convenience. And then she beeped.

“Uuuuum . . .” he began, mind blank, then hung up. He immediately called back—and was caught flat footed when, on the first ring, an annoyed Granny Gin asked “What?”

“Oh! I . . . I thought I’d get voicemail?”

Even though she made no sound, he could hear her shaking her head.

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“What do you need, Bram?”

By now he'd found his feet again: “I need to know what you were doing between 2004 and 2008, when you fell off the map.”

“Same thing I'm doing now, more or less. But with a better budget.”

“Reading folks' tea leaves?”

She snorted, and he could hear her rueful smile when she replied,

“More or less.”

“And what happened at MIT? In late 2001 or early 2002?”

“Nothing,” she said. “What happened was at Carnegie Mellon in 1995. Do you know how many people die each day in New York City?”

Bram was pacing around the library bike racks, and had just noticed the security guard giving him the stink-eye. He eased away from the building and forced himself to stand at the curb, gazing out as though waiting for his ride.

“I'm sorry,” he said into the phone. “What about New York?”

“About 144,” Granny Gin continued, “There's a death in New York City every 9.1 minutes, on average, for a total around 4,032 each period.”

“Period? Like a ‘fiscal quarter’?”

“No. Well, actually, sort of: In our research we break the year into 13 periods of 28 days each. I'm told hotels do something similar. Months are a load of crap. ‘Fiscal periods’” he could hear the sarcastic air-quotes, “are even worse. At any rate, my first big series of samples, back when my project was in its early stages—much less precise—was from Bellevue Hospital, in Manhattan. It . . . “ he could feel her picking her words very carefully, “it wasn't precisely sanctioned, but this was before HIPAA, and there was no personally identifiable information attached to the samples. It was a big set from a very large phlebotomy department, and it cost me a pretty penny to get it. But it was a treasure trove. And it surfaced a very odd thing: In an average New York City period, about 4,000 people will die. The series from Bellevue showed a similar distribution—except for one particular period in 2001. In that period deaths were more than 25 percent higher than expected, closer to 6,000. And they slewed wrong.”

Bram was staring out across the parking lot at the grassy easement. A squirrel out there appeared to have somehow acquired an entire Krispy Kreme donut, and was now struggling to find a way to get it up into the tree. “Pardon?”

“Around 91 percent of all deaths in the United States are natural deaths. In the case of my research, these are indicated by deaths where the telomere-calculated

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death date—the time until the organism’s ‘biological death’—is in the same range as the correlated supertranslation number, which gives us the amount of time that the organism continues to be a coherent system.”

“OK,” Bram said, “I remember this from our chat at your family reunion—the first is a biology thing, the second a physics thing. If the numbers are close, you die a natural death. If the numbers aren’t, it’s because you get killed well before you would have otherwise died.”

“Look at the big brain on Bram,” he could hear the smile in her voice. “He can be taught. Broadly speaking, my Bellevue samples were ‘normal’: About 91 percent of them would die of natural causes. Except for this one nonconforming period. Not only were there 25 percent more deaths than expected during that period, but almost 30 percent of that period’s deaths were going to be unnatural.”

“I’m not following,” Bram admitted. “What had you found?” The squirrel was circling the tree, hopping and stumping along like a Dickensian street beggar, unwilling to lose its grip on the prized donut for even a moment.

“Well, principally I’d found that there was a single month when a whole lot of extra people were going to die unnaturally in New York City. But more importantly, I’d found the limits of what I could sort out on the budget and teaching load Carnegie Mellon had saddled me with. I moved to MIT in 1998; state-of-the-art facilities, DARPA money. And pretty quickly we found something else interesting: Our aberrant period wasn’t an aberrant period at all; it was a perfectly average period with a single extraordinarily aberrant day. On one specific day in 2001, instead of 144 New Yorkers dying, 1,227 would die. And of those, 1,017 would die of unnatural causes.”

Finally, Bram’s lucky squirrel flipped the donut up and over its head, and wearing it like an absolutely gaudy necklace, shot up the tree and into the safety of the red and gold festooned boughs. “9/11?” Bram asked, but it wasn’t a question at all.

“And here I’d been thinking you were very bad at math,” Granny Gin replied.

“Yes. September 11, 2001. And I knew by March of 1999, 18 months beforehand.”

“But didn’t, like, close to 3,000 people die at the World Trade Center on 9/11?”

“Yes. But only 1,017 of them had blood samples in the Bellevue series.

Anonymized blood samples; no way to identify a single one of them—as

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had been the condition of the anonymous individual who supplied the anonymous individual who supplied the middleman who supplied me. By March of 1999 I knew that an abnormally large number of New Yorkers would die on a particular day in the fall of 2001, but I didn't know which New Yorkers or where or why."

"So what'd you do?"

She sighed again. "It's a long story, but what I did was make a world of trouble for myself—first by talking to my patron saint in the Department of Defense, and then by talking to anyone who would listen."

"What'd you say?"

"None of the right things. I was still in denial then, I suppose. I was a younger woman than I am now. After all, what difference would it make what I said? Those 1,027 people, it wasn't as though I thought they might die unless I did this or they did that or the federal government did some other thing. That's the whole point: I knew they would die, no matter who did what. It was all said and done: Those 1,027 human beings would no longer be functional physical systems after September 11, 2001. End of story."

"Well, then, what good is any of this?" He asked, "Why would DARPA even fund you to begin with?"

"DARPA is a 'fail-forward' organization, Bram. They are willing to put a lot of money behind things that fail fast in an interesting way—which is more or less the definition of pure research: It mostly fails, and in mostly interesting ways. This particular project just happened to succeed. Besides, it is indeed often quite useful to know who will die when, and if foul play can be reasonably eliminated. Just as a for-example, don't you suppose it allowed the Secretary of Defense to free up a lot of time and resources, knowing that Hugo Chávez would die of natural causes on March 5, 2013?"

"They knew?"

"I told them. In 2003. Using DNA from a handkerchief they paid someone to swipe in 1995, when Chávez was traipsing around his country talking revolution and military overthrow. And imagine the savings for the Secret Service. They haven't had to seriously worry about a sitting President or his family for almost two decades."

Granny Gin stopped, clearly considering something, and then went on. "I'll tell you one thing that sailed past me that day in 1999 when I called my patron saint, and came back to chill me to the bone on the morning of September 11. When I called my man in the DoD in 1999, I told him that a thousand people would die in New York

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City on September 11, 2001. He made this little astonished sound—the sort of sound you make when someone tells you the price of a nice suit and it’s well below what you’d resigned yourself to—and then said ‘Just 2%?’ But I was already on to the next thing, and he was already on to shunting me off on to some assistant sub-secretary to someone else—all the governmental theater of giving a crap. I never thought to ask what he meant by ‘Just 2%.’

“I don’t get it,” Bram confessed, “2 percent of what?”

“Two percent of the occupants of the World Trade Center. It would be years before it came together in my head that my research—which seemed so abstract in that instance, useless information of great precision—actually gave them something that they needed very badly: Confirmation that a thing they strongly suspected was going to happen really would happen, and the reassurance that, by their standards, it wouldn’t cost them very dearly. It doesn’t matter now, since—” She paused then, as though she might add something, but Bram didn’t notice.

“Jeez,” he sighed. “Wow. OK, I have a ton—”

“Yes, you have a ton of questions, but I don’t have a ton of time to talk right now. How about we sit down over a cup of tea?”

“In Boston? That’s a bit of a drive for me.”

“Cambridge, Bram; the Massachusetts Institute of Technology is quite famously in Cambridge—but I’ll be in Southern Ohio visiting family week after next. I’m sure Betsy will want a ride down. We can have our little tête-à-tête then.”

True to her word, Granny Gin was indeed in Southern Ohio nine days later, in a copper casket that glowed under the funeral-home lights like cool, mellow fire.



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