

STEPHEN DEDMAN

SCHRODINGER'S CATALYST

Stephen Dedman's first novel, *The Art of Arrow Cutting*, has just been published to good reviews. That novel blends fantasy and thriller genres, but in the following story Mr. Dedman gives us straightforward SF. "I wanted to write about sane scientists," he writes us from his native Australia. "I've only ever met one mad scientist--an entomologist with an enthusiasm for Madagascar cockroaches--and even he may have been merely eccentric."

Mad? Sane? Who can say what's in the box?

CAT, n. [(C)lear-(A)ir (T)urbulence.] Avi. The turbulence encountered in

cloudless air as differentiated from storm turbulence...

catabasis, n. pl catabases. A going down or back...

catamnensis, n. pl catamnenses. Med. A patient's medical history taken during, or after recovery from, an illness.

I glanced out the window while I waited for the elevator. It must have been at least ninety outside already, and even the insects looked exhausted, but the clouds were there, as always; big, fat, lumpy cumuli, randomly scattered through the bone-dry air. We'd spent much of the night before watching the lightning, betting on how it would fork and expecting it to rain. It hadn't. Chalk up another victory for Chaos Theory.

I passed up the hotel breakfast in favor of coffee in the Green Room. DefDep was picking up my tab, but good, freshly brewed coffee always tastes vaguely wrong to me. Szymczyk, Schwartz, and Fukushima were still sitting around the table in the corner, arguing about turbulence and weather control and butterfly effects, as they had been at the last two conferences, Fuku paused long enough to grant a greeting. The coffee was bitter and corrosive and exactly what I needed. I poured a little cream into it, watching it swirl and break up into fractal patterns. When I looked up, Cassidy was sitting at the table nearby, wearing a garish NASA T-shirt. With her dress sense and those breasts, it's no wonder she can't get tenure.

"Isn't it a little early for you?" I murmured, politely.

"I'm looking forward to your paper," she replied, opening a can of something that looked horribly healthy. I shrugged. I wasn't due to deliver my paper until tomorrow, but it may have been a non sequitur. I finished my coffee, glanced at my watch -- 9:37 -- and reached into my briefcase for my copy of the program. It wasn't there. I yawned, and walked over to the conference center. The traffic was heavier than I'd expected, this late on a Friday, even for a town where the

malls don't open until ten.

I wandered around the halls, reading the program outside each room. It was all obvious stuff, and most of the names were unfamiliar. All of the really good work being done in the field is still classified. I stepped back and leaned against a pillar, reaching into my jacket pocket for my notebook and the list of possibles. I was still fumbling with the index (computers are for kids and passwords doubly so) when a fortyish woman in a maroon uniform passed in front of me, removing the program cards and replacing them with new ones. Curious, I wandered back and looked again. Fool woman had put Saturday's program up a day early. I caught up with her, and told her so, and she glanced at me, early morning irritation on her broad brown face. "This is Saturday..." she said, patiently, as though talking to a child, and then added, "Doctor."

I stood there, refusing to believe I could have misplaced a day. Physicists have a reputation for absent-mindedness and eccentricity, true; Feigenbaum spent a long time experimenting with twenty-six hour days, and Einstein often forgot his own address, but I can't claim the excuse of genius; I'm a lecturer and administrator, I have classes and meetings and deadlines every other day.

I glanced at the notebook again, and punched up the chronograph function, a little hesitantly. Saturday, August 5th. My watch confirmed it. I sagged against the pillar, and tried to think.

"Morning, Peter," came an annoyingly cheerful voice from a few feet away. "Head-hunting again?"

I looked up. My confusion must have shown on my face, and stimulated Cortese's minuscule compassion circuit. "Something wrong?" he asked, softly.

I straightened my shoulders as best I could. How much could be wrong, after all? I hadn't had any commitments on Friday -- a few papers I would have liked to have heard, but I had the abstracts. I could remember Thursday pretty well, and I'd known it was Thursday. I'd attended the opening address, all the telltales of Thursdayness had been apparent. okay," I replied. "A little jet-lag, maybe. I should be used to it, by now."

The Jesuit bastard snorted. "Not a hangover?"

"Did I get drunk last night?" I asked, before I could stop myself. Cortese shrugged.

"How would I know? The Bomb and Novelty Shop doesn't try to ply me with flaming Lamborghinis, or B-52s, or Wargasms, or whatever they call 'em. You sure you're okay?"

I nodded, and stood. I was shaky, sure, but my mouth is usually the first to tell me when I've downed too many cocktails, and it said I hadn't. "I'm fine," I said, almost believing it.

The maid had tidied my room by the time I returned. My program book was sitting on the bed, and I grabbed it on my way to the bathroom, and sat on the bidet by mistake. I wasn't accustomed to this sort of opulence; there was even a small TV monitor on the marble bench near the handbasin. It was a far cry from the bathroom at my parents' home, or the even worse one at the rooming house I'd stayed in as an undergraduate, or the graffiti-splattered ablutions block at the summer camp where I'd worked as a counselor....I looked at myself in the mirror, cautiously. I've never been good looking, but I knew how to wear a suit and knot a necktie better than ninety percent of physicists.

I hated these conferences, hated leaving my familiar labs and lecture theaters and offices, even if there was a TV in the bathroom and someone to make my bed for me. I looked at Friday's abstracts. I hadn't made any notes, nothing that would remind me of where I'd been. I swore, stood, flushed the toilet, and zipped my trousers up. I opened a drawer to find a new tie, and saw the gun. For a moment, I thought -- hoped -- that I'd walked into the wrong room, but that was so improbable that I rejected it immediately.

I stared at the gun-- a smallish revolver with a short barrel and rubber grip. It didn't look familiar; my father had owned a shotgun, and taught me to use it, I'm not a pacifist like Cortese or Cassidy, but I'd never handled a pistol before. Never felt the need. I broke it, and emptied the cylinder into my palm. Four bullets, and one spent cartridge.

Why the hell would I have bought a pistol? Pistols are only good for killing people, and I couldn't think of anybody I wanted to kill...well, nobody in Florida, anyway.

I sniffed the muzzle. It smelt clean, well-kept, and it hadn't been used in the past few hours. I sat there for a moment, wondering what the hell to do next, and then I dropped the offending item on the bed and collected a paper bag from the bathroom, a handkerchief from the drawer, and the stapler from my briefcase. I wiped gun and bullets clean of fingerprints, and then dumped them into the bag, which I stapled shut. The bag went into my suitcase, and I made a mental note to throw the whole mess into a lake before I had to fly out.

I delivered my paper with as much enthusiasm as I could muster, hoping that nobody would ask any questions I couldn't field. Nobody did; maybe nobody was sufficiently interested. I caught up with Cassidy in the corridor outside. "Lunch?" I panted.

She looked startled.

"Are you free for lunch?" I repeated. "On me?"

The startled look faded into mild suspicion. Finally, she nodded.

"There's a sushi bar up International Drive. You have a car?"

"Yes -- over at the Peabody."

"Okay."

There was still some uncertainty there. "Did you have other plans?"

"No, I'm just -- a little taken aback. Are you okay?"

I shrugged. "A little stressed, I guess. That, and jet lag. Nothing serious."

"When was the last time you had a vacation?"

"I hate vacations," I replied, automatically. Actually, that was true. Half of my colleagues had taken at least one day off to visit Disney World or one of the other playgrounds; I hadn't even found the way to the hotel swimming pool.

Cassidy shook her head, tut-tutting like my Jewish grandmother. "When did you come to that conclusion? What do you do in the summer?"

"Work." I tried to keep it light. "DepDef doesn't believe in holidays. Eternal vigilance is the price we, etc., etc."

"Christmas?"

I grimaced. "I go and see my family. Sometimes."

"When you can't avoid it?" she asked, gently.

"We don't get on that well," I explained. "They're still living in the town where I grew up, and I hate the place." I blinked. I couldn't remember ever telling anybody that before, and I felt as though I'd given away classified information.

"Any hobbies?"

"Uh...I like flying, especially gliders, but I haven't done that in --" I had to think about it, "two years. Maybe three."

"What did you enjoy as a kid?"

I shrugged. "Nothing. I hated it; couldn't wait to grow up."

"I suppose you hate sushi, too?"

"I've never tried it," I admitted.

She smiled. "Let's go."

I switched the radio on as soon as we were in the car, to try to postpone any further conversation, and caught the local news headlines, and that's how I heard about the murder.

"Friend of yours?" Cassidy asked, softly.

"What?" I jumped, and nearly steered the TransAm into the side of an old Lumina. The driver flipped me the finger; her red nails were over an inch long, and viciously curved.

"The Father...the victim. Did you know him?"

It was only a few blocks to the restaurant; if it weren't for the heat, we'd have been better off walking. "I don't know. The name rings a bell, vaguely..." Cassidy laughed, and tried -- unsuccessfully -- to disguise it as a cough. "What's funny?"

"Sorry. 'Rings a bell,' and him being a priest...I shouldn't have laughed."

The restaurant was visible now. "I knew a Father York, yes," I said, as I parked the car. "He was our parish priest, when I was a boy. I never knew his first name. I suppose it could be the same man..." I let go the wheel, trying not to let my hands shake. I told myself not to jump to conclusions, that I didn't have enough data, that there was such a thing as coincidence, that a hunch or a feeling wasn't proof...it didn't work very well.

"Who'd want to murder a priest?" Cassidy asked, innocently.

Instead of answering, I opened the door and stepped out into the Florida sunlight. I ducked around the car to open Cassidy's door for her, but she was quicker. "Something is wrong, isn't it?"

"No, of course not."

She slammed the door and swore at me. "Peter, if you think I'm going to sit opposite you for an hour and try to guess what is going on inside you like you were some sort of Schrodinger's bloody cat, and waste a perfectly good sashimi platter into the bargain --" She ran out of breath before she ran out of fury, and spluttered at me for a few seconds before remembering to inhale. "I gave you the benefit of the doubt; you've never tried to recruit me before, so I assumed it wasn't that, and I didn't think you'd waste your time trying to seduce me; you could do a lot better. Okay. You want to talk? Then

I had to laugh. Cassidy is barely five feet tall, and very stocky, with short curly hair; she looked for all the world like Samwise the hobbit (Jesus, how long was it since I read that book? Thirty years?). A second later, she joined in the laughter. When we'd finished, she leaned back against the TransAm and snapped, "Well?"

"Do you remember seeing me yesterday?"

She stared at me. "What?"

"I'm serious. It's important. I really can't remember."

She blinked, and then shrugged. "I remember better on a full stomach. You look like you'd better eat something, too. Come on. My treat."

I couldn't bring myself to eat raw fish, so Cassidy assured me that the katsudon was safe. To my relief, we didn't have to remove our shoes, or use chopsticks, and we were escorted to a paper-walled booth that reminded me of a confessional. "You weren't in the green room yesterday morning," Cassidy mused, after the waitress brought us cups of yellow, salty tea. "I missed most of the papers -- Morgan and I went to the Space Center until four or five--and I don't remember seeing you in the evening, but that doesn't mean much."

"Thanks."

She looked at me over the rim of her soup bowl, and obviously decided not to ask me the next question.

"Any progress with the frequency doubling?" I asked.

The look became wary. Cassidy knows that DefDep is very interested in her work on blue lasers (she's interested in the micro-surgical applications; they want EMP-proof computers), and she rightly suspects they'd pay a lot to have it classified. "No. Why?"

"Just curious."

"You don't expect us to succeed, do you?"

I tried to spear one of the white soft cubes in my soup, and decided it wasn't worth the effort. "You're working with very limited resources," I evaded. Cassidy's a much better physicist than I am, but the days when you could make even a minor breakthrough in physics with less than a million dollars are long gone; the cold fusion debacle proved that. "I wish you luck, of course."

"At least we're not trying anything physically impossible."

"S.D.I. wasn't impossible." Okay, so some of our satellites have to be repaired and re-deployed, some of our rockets still blow up on the launch pad, none of the nukes we've launched accidentally have ever detonated, and we bombed the French Embassy in Libya and our British allies in Kuwait; I'm sure that we could have made the system work, if we'd had unlimited resources and maybe a couple of centuries, and who was I to say it wouldn't have been worth the effort? "Besides, it did for lasers what World War II did for avionics; without it, this conference wouldn't be happening..."

"Does that justify it?"

I shrugged. What would the money have been spent on otherwise? Stealth bombers that didn't fly? Cruise missiles that did? Not on hospitals, or medical

research, or controlled fusion, or the civilian space program. Of that, I was sure.

I told the hotel manager that I'd lost a 3" floppy of valuable (but not classified) data; I didn't accuse anybody of having taken it, of course, but I told him that I wanted to know which maid had cleaned my room on Friday, and when, in case she'd seen it. He told me. She'd cleaned the room between 10:10 and 10:35, and I hadn't been there.

I sat in the room for a while, staring at the bag with the gun inside, wondering where the hell it could have come from. How easy was it to buy a handgun in Florida? Was there a waiting period? I'd seen the 'No Firearms Permitted' signs in the parks and outside the cinemas...

Eventually, I tore the bag open and had a closer look at the gun. The bullets were .38 Special; there were probably half a million guns firing the same caliber in the state, and if York had been shot with anything else, I was in the clear. Unfortunately, I didn't know any safe way of finding out; my security clearance didn't extend to routine forensics, somebody would want to know why I wanted to know. I stared at the gun for another moment, my hands shaking, and then carefully wiped it clean again and took another bag from the bathroom.

After all, I told myself, I couldn't have been the only one with a motive. It'd been more than thirty years, nobody had believed me at the time; even if I'd been the first, there must have been others later...

I lay down on the bed, and tried to think. My last memory of Thursday night -- actually Friday morning -- was the General Dynamics cocktail party. I'd been arguing with a couple of Oxonians about the English 'friendly fire' casualties in the Gulf, and Lippincott had rescued me; I'd left just after two, and come straight to bed. Then...Saturday morning. Okay. And York, according to the local papers, had been shot sometime Thursday afternoon. That should have meant I was in the clear, and there was no need to get into a flap, but...

Okay, I thought. I don't remember Friday, but I do remember Thursday. I don't remember seeing York -- hell, I didn't even know he was living in Florida, though I could've guessed he'd retired if I'd bothered thinking about it. I certainly don't remember buying a gun...I stared at the bag. I might never know whether I'd bought it or not, unless I'd used my Visa card, and I wouldn't have done that if I'd been planning to kill somebody...

Or it might have been York's gun. I might have found it there. But why would I visit Father York? I stared at the bag again, and knew there was only one reason.

But I couldn't have visited York. Okay, forgetting maybe twenty-four hours, I could accept. Not being seen by anybody in that time...not impossible, and it still didn't mean I'd disappeared completely...

But disappearing Friday, and being in two places at once on Thursday...for

Christ's sake, that was time travel! Nobody believes in time travel, not even chaos theorists or science fiction writers. And even if it was possible, it'd take enormous amounts of energy, billions of dollars of equipment, not just one third-rate laser man wanting to kill the man who'd abused him as a boy --

But I couldn't shake the feeling that I'd done it, that I'd killed the bastard. I didn't know it, the way I know my name or the speed of light in a vacuum, and I was sure no one could prove it, and I didn't feel guilty, but...

I sat there shaking for what felt like hours, then stapled the bag shut, dropped it into my briefcase, removed my name badge, and walked out.

Finding a lake was easy (Orlando is reclaimed swampland); finding a Catholic church more difficult. I guess I should've tried the phonebook before I left the hotel. The place I finally found was small and shabby, a concrete blockhouse with an unpaved car-park, barely distinguishable from the topless bar across the road. Inside, it was dark, and almost miraculously cool.

The confessional was empty, and I sat down and pulled the curtain shut, sealing myself inside like Schrodinger's cat. "Bless me Father, for I have sinned," I mumbled. "It has been..." Oh, Jesus, "uh, thirty years since my last confession." Silence. "Thirty-one," I said, after a quick calculation. "My sins are..."

"I..."

"I think I killed somebody."

There was a long silence, then a soft, vaguely feminine voice suggested, "Tell me about it."

I stared at the screen. Granted, it'd been nearly thirty years since I'd set foot in a church, but I knew there weren't any female Catholic priests. "I'm sorry," I said. "I can barely hear you."

"Is this better?" The voice was louder, but no deeper. It sounded a little like my sister, a little more like Cassidy. Maybe it wasn't a female voice at all, just an accent. At least it was easier to listen to than York's Southside Chicago growl. "I think I killed a priest," I said. "A Catholic priest."

Another silence. "You're not sure?"

"I don't remember doing it," I replied. There seemed no point in adding that I was somewhere else at the time.

"Then why do you think you killed someone?"

"That's not all I don't remember," I said, glumly. "I don't remember buying a gun, either -- but there was a gun in my room this morning. I don't remember shooting him, or even seeing him, but somebody shot him --"

"Why do you think it was you?"

"Because I had a motive."

"Were you the only one?"

"I don't know."

"Could there have been two other people who wanted to kill him?"

"Yes, maybe."

"More than two?"

"I don't know."

"Five more? Seven? Nine?"

I hated the idea, but it was certainly possible. "Maybe."

"Maybe more?"

"I don't know!"

"And they could have done it?"

"Yes, I guess so..."

"So," said the voice. "There's maybe a one-in-ten chance that you killed somebody. Maybe one in twenty, maybe one in a hundred."

I sat there, and digested that. How did you calculate the probability of time travel? Wasn't it much more likely that someone else had shot him? "Yes," I said. "I guess that's right. Maybe even less than that."

"What do you do for a living, my son?"

I started: what the hell did that have to do with anything? "What?"

"What's your job? What do you do?"

"I'm a scientist," I said. "A physicist. Why?"

"What do you do?"

"I'm an assistant professor." I said. "I lecture, take a few classes, do a little research, and write a third-rate paper every now and then. And I recruit better physicists for DefDep -- Department of Defense--projects. I guess that's all."

"Have you done anything good?"

I thought about that. "I did some pretty good work on CAT -- Clear Air Turbulence -- back in the eighties. Nothing very deep, but it was nonclassified, and well received; it's still being cited occasionally, mostly by chaos theorists, and I guess it got me the DefDep job. Since then --" I shrugged.

"What's your speciality?"

"Laser guided weaponry," I replied before I had time to wonder whether or not I should.

"And the weapons you help build," said the voice, "have they been used?"

"Yes."

"They've killed people?"

"Yes...I mean..."

"How many people? Hundreds? Thousands?"

What the hell? "I don't know," I said, warily. "I've no data -- no evidence. Maybe they've saved lives, too. We're making the weapons more accurate -- okay, maybe that makes them more deadly, but we kill fewer civilians, fewer of our own people, I think that's a worthwhile goal --

"I mean, back when Reagan wanted Libya bombed, 'precision bombing' meant that they hit the right city. Okay, they hit Gadaffi's home, but they also hit the French Embassy. Now, look at the Gulf War. 'Precision bombing' meant putting a missile into a bunker through the door or window." At least, I admitted silently, those were the ones we showed on TV.... "If I have to take my share -- and it'd be a microscopic share --of the blame for anybody who died in those bunkers, okay, I'll take it. I mean, the weapons didn't cause the war, it still would've been fought without them..." Or would it? I wondered, silently. Would Iraq have invaded Kuwait if it hadn't had the weapons left over from the war with Iran? What would we have done if it hadn't looked like such an easy victory? Anyway, that was war, not murder, and it hadn't been my decision to...

"What about the 'friendly fire' casualties?"

I opened my mouth to speak again, and then closed it. "Accidents are inevitable," I said. "Especially if you can't actually see your target, and have to rely on circumstantial evidence to know if you've hit somebody.... At least it wasn't men fragging their officers, the way it was in Vietnam..."

"Are they inevitable? Even with more accurate weapons?"

"Hell, yes! Even if you can pick out a target with a laser...it never works

quite the way it would in a model. The air is never completely clear, or completely still, and you can't predict what it'll do to the beam, there's always butterfly effects, and the missile is much slower than the beam and even more prone to turbulence, to chaos....We're very close to the theoretical limits of accuracy already."

"Why do you do it?"

"Do what?"

"Weapons work."

"It's my job. It's what I'm --" I stopped. "What I'm good at" wasn't particularly accurate, and "what I'm paid for" didn't seem adequate, not when I was being accused (was I being accused?) of murder. After all, it wasn't as though the weapons wouldn't still be built, and used, if I quit, or that I was going to make some great contribution to physics...

I was still hunting for the right words when the voice asked, "What's a butterfly effect?"

"Huh? It's...it's an idea from Chaos Theory. A statistically trivial event with significant repercussions. Like a butterfly flapping its wings in China changing wind patterns and causing a hurricane in Florida...but I think the name really comes from an old Ray Bradbury story. A time traveler treads on a butterfly in the Cretaceous and changes the future. 'A Sound of Thunder.'"

"One butterfly can make that much difference?"

I laughed. "Theoretically. It's a thought experiment, like Schrodinger's Cat. But if it's in the right place at the right time..." I remembered why I was here, and stopped laughing, very suddenly. There was silence on the other side of the grille. "Ah, Father..."

Silence.

"Father?"

Still, silence.

"What's my penance?" I whispered, but there was only silence, and when I found the courage to open the booth and look inside, it was empty.

DefDep was less than delighted by my resignation, especially when I said I was going to be working on blue lasers with Cassidy. Maybe I should've told them I believed in time travel, that I knew it was possible if we had the resources and maybe a couple of centuries, and who was I to say it wouldn't have been worth the effort?; they would've been much happier to get rid of me. I'm sure they were far more upset when Fukushima resigned from the Weapons Division, only a month later. Maybe I've started something...

Cassidy's stopped asking about that Friday (or was it a Thursday) last August; after all, I've got days to spare, now. Sometimes I work at the lab. Sometimes I go flying. Sometimes I read history books, and marvel at how minor events or timely inventions have changed the world, and how narrowly catastrophes have been averted. But usually, I just sit on my balcony, and watch the butterflies blow the clouds around.